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EDUCATION LEGISLATION, 1967

HEARINGS

BEFORE THE

SUBCOMMITTEE ON EDUCATION

OF THE

COMMITTEE ON LABOR AND PUBLIC WELFARE

UNITED STATES SENATE

NINETIETH CONGRESS

FIRST SESSION

ON

S. 1126

A BILL TO STRENGTHEN AND IMPROVE PUBLIC AND PRIVATE PROGRAMS OF ASSISTANCE FOR INSTITUTIONS OF HIGHER EDUCATION AND STUDENTS ATTENDING THEM

KANSAS STATE UNIVERSITY LIBRARIES

EUGENE, OREG., APRIL 26, 1967

PART 2

Printed for the use of the Committee on Labor and Public Welfare

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PART 2

Printed for the use of the Committee on Labor and Public Welfare



U.S. GOVERNMENT PRINTING OFFICE

80-086 O WASHINGTON : 1967

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EDUCATION LEGISLATION, 1967

TUESDAY, APRIL 26, 1967

U.S. SENATE,
SUBCOMMITTEE ON EDUCATION OF THE
COMMITTEE ON LABOR AND PUBLIC WELFARE,
Eugene, Oreg.

The subcommittee met, pursuant to notice, at 9:30 a.m., in the Eugene Hotel, Senator Wayne Morse (chairman of the subcommittee) presiding.

Present: Senator Morse.

Committee staff members present: John S. Forsythe, general counsel, and Charles Lee, professional staff member.

Senator MORSE. The hearing will come to order. We are this morning opening the first series of hearings on the administration amendments in the field of higher education, which are contained in S. 1126, which I had the honor to introduce on February 28, 1967.

INTRODUCTION OF SUBCOMMITTEE STAFF

This is a rather historic occasion. This is the first field hearing conducted by the Education Subcommittee of the Senate Committee on Labor and Public Welfare since I assumed the chairmanship in 1961. We plan to conduct a series of such field hearings in the months ahead.

At my left sits Mr. John S. Forsythe, the general counsel of the Senate Committee on Labor and Public Welfare. I want to say, some of you heard me say last night at the dinner that Mr. Forsythe served as the legal counsel of the committee. He has been my close adviser on the legal problems connected with the work of my subcommittee.

He has served Senator Hill as his general counsel, and the committee's general counsel for some years. To all of us in the room who have a great interest in education legislation, I only want to say that we are all greatly indebted to the public service that Mr. Forsythe has performed for a good many years in the Senate.

Next to Jack Forsythe is Charles Lee, the legislative counsel of the Subcommittee on Education. To my fellow Oregonians, I want to say I am proud to boast about Charley Lee, an Oregonian and graduate of Reed College. He spent most of his life in Oregon. He went to Minnesota for his graduate work. Of course, as I told some of you last night—he closes his ears when I say it—he is a walking encyclopedia on education legislation, and the process of passing education legislation.

Frequently, the Department of Health, Education, and Welfare pirates him from me in order to advise with him on the legislative process. We are greatly indebted to Charley Lee for his services to the educational institutions of the country.

Next to Charles is James Moore, who is Director of Student Financial Aid, Bureau of Higher Education. I want to say, as chairman of the subcommittee, I couldn't have a more cooperative member of the executive branch in that department advising with me on the problems of mutual interests that we will be discussing today.

TRIBUTE TO CHANCELLOR LIEUALLEN

We are particularly privileged at this hearing to have available to present testimony on that portion of S. 1126, which relates to the cooperative work-study amendment, a most distinguished panel of educators and representatives of the Nation's industry. I will introduce them later in the hearing.

On behalf of my colleague on the subcommittee who could not be present this morning, and in my own behalf, both as the Senator from Oregon and the chairman of the subcommittee, I wish to extend our appreciation to Chancellor Lieuallen, too, on behalf of the Oregon State system of higher education for the cooperation with the subcommittee who has issued with me jointly the call to the Oregon Conference on Cooperative Education.

RECOGNITION OF PRESIDENT FLEMMING

I wish also to extend to President Flemming my thanks and the gratitude of the committee for his gracious hospitality on this campus which has so many pleasant associations for me.

I want to say, all of us on the committee and all of you are indebted for some of the pioneering foundation work in development of education legislative programs due to Dr. Flemming when he was Secretary of Health, Education, and Welfare. He started, or perhaps it would be a better figure of speech to say he planted, a good many of the seeds in the legislative process, vis-a-vis legislation that has grown into fruition. And we are already picking the fruits from the trees of his planting.

Few men, since I have gone to Washington in the 22 years that I have been there, have left a more notable record in any of our administrative branches of Government than Dr. Flemming left in the Department of Health, Education, and Welfare.

I am going to call upon him at this time, and I do it with great pride, to extend to you a word of welcome, and later I shall call upon him as the first witness in the hearing. Dr. Flemming.

INTRODUCTION OF THE CHANCELLOR OF THE OREGON STATE SYSTEM OF HIGHER EDUCATION

President FLEMMING. Senator Morse, thank you very much. As Senator Morse has indicated, I will have the opportunity a little later in the hearing to make some comments and present some testimony relative to the matter that is pending before this subcommittee at the present time.

At this point, however, I do want to extend a very warm word of welcome to Senator Morse. He is really just coming back home as far as the University of Oregon is concerned. And, we are always happy to have him with us.

If I were appearing before some committees of the Senate or the House of Representatives for the purpose of presenting the chancel-

lor of the State system of higher education, it would probably be necessary to take a few minutes to explain the State system of higher education. Mr. Chairman, I know that is not necessary as far as you are concerned. You understand this system of higher education far better than I do.

But, as a comparative newcomer to the State of Oregon, rounding out 6 years, I'd like to say, I have developed a very, very high regard and respect for this State system. I think Oregon has provided some very significant leadership to the field of higher education. And, during most of the time that it has been my privilege to be associated with this State system, Dr. Lieuallen has served as the chancellor to the State's system. And, all of us who have had the opportunity of association with him, regard it as a real privilege. He has made a significant contribution to the strengthening of our State system. We are all indebted to him. I know Oregonians are proud of the fact that he is a native Oregonian, having started out over in eastern Oregon.

Personally, I can think of no association that I have had that has meant more to me than my association with the chancellor of our State system. And, I am very happy to present him at this time to extend a word of welcome in behalf of the entire State system of higher education. Dr. Lieuallen.

STATEMENT OF R. E. LIEUALLEN, CHANCELLOR, OREGON STATE SYSTEM OF HIGHER EDUCATION

Chancellor LIEUALLEN. President Flemming, Senator Morse, Professor Tyler, and ladies and gentlemen. Although my credentials hardly qualify me to extend the same kind of welcome to you all to Eugene as President Flemming is qualified to extend, I am nonetheless glad to join with him in saying we are delighted to have each of you in Eugene.

I might add that, with some of the legislation pending in Salem right now, at times I attempt to disassociate myself from Eugene, because they are trying to move the office out of this community and up into Salem.

It seems a little hard for any of us to extend a formal welcome to Senator Wayne Morse to come to Oregon, because the voters, Senator, have made you feel eminently welcome here.

Senator MORSE. I will tell you better after next May.

WELCOME OF PARTICIPANTS

Chancellor LIEUALLEN. I hope you will permit me, nonetheless, as a native Oregonian and friend to say we are pleased to have you return home. And, we are especially pleased when in the process, you allow us to participate in shaping the Nation's laws.

If it were not for the fact we are crowded on the campus, I think we would have had the hearing on the campus. And, possibly, this reference to these crowded conditions would justify my urging the

Congress to make maximum appropriations for higher education under your act of 1963.

Well, to the extent that my credentials do qualify me, I am pleased to have been privileged to join the Senator in inviting you all to this hearing, and now welcome you to Eugene.

NEED FOR COOPERATIVE WORK STUDY AMENDMENT

The topic is very timely. The need, as we view it, is urgent.

I think it's fair to say that the figurative walls, which have divided the campus and the community, have been crumbling for some time. Title 1 of the Higher Education Act of 1965 added to the demolition process. And, I suspect, if succesful, implementing the cooperative education project at the national level will hasten the demolition.

This amendment, as I view it, however, is not simply going to bring the community and the campus into closer relationship. It's going to provide students with a substantial amount of self-generated financial assistance. I do not need to remind parents and students of this State of the rising cost of education, particularly in view of the fact we have found it necessary to recommend another increase in the already too high tuition charges for our young people.

VALUE TO STUDENTS

The fact that over 50,000 students are now involved in the work-study-curricula of more than a hundred colleges across the Nation, and the fact they are going to earn in this process more than $90 million, are clear indications that we are talking about something which works, and which needs to be extended. We are not talking about something that is untried and simply experimental.

In a world that is growing more complicated every day, the word "cooperative" seems to me to have some very special kind of meaning, because more and more, it's going to be necessary for us to develop cooperative approaches to solving our problem. And, I personally, like very much the idea of having young men and women, while earning a part of their college expenses, being able to gain some insight into the problem of business and industry.

VALUE TO BUSINESS AND INDUSTRY

But, I think it's equally important that business and industry in this process have an opportunity to gain insight into the skills and the attitudes and the concepts and the values of the broad spectrum of young people who make up the main portion of our college population.

So, Senator, we wish you well in this undertaking. And, I am eager to help in any way I can. It seems to me the hearings are a quite popular item these days. In Salem, there will be two hearings before the day is out, one on our operating budget, and the other on our capital construction budget. So, I will need to leave at some point during your proceedings. This is not a lack of interest. This is as my commanding officers in the Navy said, "Doing first things first."

Thank you very much.

STATEMENT OF HON. WAYNE MORSE, A U.S. SENATOR FROM THE STATE OF OREGON

Senator MORSE. Chancellor Lieuallen, we are delighted to receive your address of welcome, and also the comments that you make on the purpose of the hearing.

I want this record to show, in behalf of the subcommittee, we received through you, and President Flemming, President Jensen, and the presidents of all the institutions of higher learning in the State of Oregon, complete cooperation when we have asked for help and for data and information bearing upon the problems in Oregon, in relation to the proposed legislation.

You and I talked before the hearing started this morning in regard to another problem that I have asked you to give me some assistance on, and that is the matter of whether or not we can justify the cutback that is already being proposed in regard to matching funds in one phase of the problem. I shall take that up with the committee next week when you send me the data.

I want the record to show the thanks of the committee for your unfailing cooperation, and for the unfailing cooperation of the entire system of higher learning.

I realize you need to go. Please feel free to go whenever you need to. That goes for President Flemming too as soon as he has finished the testimony that I will call on him for very shortly.

As chairman of the subcommittee, before I present the opening statement for the record, in behalf of the entire subcommittee, I direct that the committee staff insert at this point in the hearing record the text of the bill S. 1125, section by section analysis prepared by the Office of Education in the bill, together with fact sheets and explanatory statement of the administration concerning the various provisions of the measure.

(The material referred to follows:)

90th Congress
1st Session

COMMITTEE PRINT

BILL TEXT, CHANGES IN EXISTING LAW, AND SECTION-BY-SECTION ANALYSIS OF S. 1126

HIGHER EDUCATION AMENDMENTS OF 1967

(LANGUAGE IN WHICH NO CHANGE IS PROPOSED IS SHOWN IN ROMAN TYPE; LANGUAGE PROPOSED TO BE DELETED IS SHOWN IN BLACK BRACKETS; AND LANGUAGE PROPOSED TO BE ADDED IS SHOWN IN *ITALIC* TYPE)

PREPARED FOR THE

SUBCOMMITTEE ON EDUCATION

OF THE

COMMITTEE ON LABOR AND PUBLIC WELFARE

UNITED STATES SENATE



APRIL 1967

Printed for the use of the Committee on Labor and Public Welfare

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U.S. GOVERNMENT PRINTING OFFICE

WASHINGTON : 1967

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FOREWORD

As an aid to the Subcommittee on Education of the Senate Committee on Labor and Public Welfare in its consideration of S. 1126, the Higher Education Amendments of 1967, I asked that the material which follows be collected as a committee print.

The material was prepared by the staff of the Office of Education and will I believe, be most helpful to members of the subcommittee and other interested Senators in evaluating the recommendations of the administration which are contained in this bill.

The text of the bill is set forth first. The effect of the bill if enacted as introduced upon existing statutes is then set forth in the form of a "Cordon Print" with matter to be deleted enclosed in black brackets and new language proposed to be added shown in italic type. Finally there appears a section-by-section analysis of the bill together with materials justifying the proposed changes.

On behalf of the subcommittee I wish to express our appreciation to the Office of Education for the services performed by its staff under the direction of Dr. Albert L. Alford, Assistant Commissioner for Legislation, and to Mr. Theodore Ellenbogen, Assistant General Counsel of the Department of Health, Education, and Welfare, for providing, in this most useful format, the material which follows.

WAYNE MORSE,
Chairman, Education Subcommittee.

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90TH CONGRESS
1ST SESSION

S. 1126

IN THE SENATE OF THE UNITED STATES

FEBRUARY 28, 1967

Mr. MORSE introduced the following bill; which was read twice and referred to the Committee on Labor and Public Welfare

A BILL

To amend the Higher Education Act of 1965, the National Defense Education Act of 1958, the National Vocational Student Loan Insurance Act of 1965, and the Higher Education Facilities Act of 1963.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act, with the following table of contents, may be cited as the "Higher Education Amendments of 1967".

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Sec. 453. Encouraging availability of non-Federal capital for national defense student loans by establishing a revolving fund from which institutions may obtain loans to capitalize student loan funds, and providing for allotment of Federal capital contributions to such funds.

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Sec. 1001. Adjustment of interest rate on loans.
Sec. 1002. Extending authorization for higher education facilities construction assistance in major disaster areas.

TITLE I—AMENDMENTS TO TITLE I OF HIGHER EDUCATION ACT OF 1965 (COMMUNITY SERVICE AND CONTINUING EDUCATION PROGRAMS)

EXTENSION OF GRANT PROGRAM

SEC. 101. Section 101 of the Higher Education Act of 1965 is amended (1) by striking out "and" before "$50,000,000", (2) by inserting after "succeeding fiscal year" the following: ", and such sums as may be necessary for the next five fiscal years", and (3) by striking out the last sentence of such section.

EXTENSION OF 75 PER CENTUM FEDERAL SHARE THROUGH FISCAL YEAR 1969

SEC. 102. (a) Section 106 (a) of such Act is amended by striking out "75 per centum of such costs for the fiscal year ending June 30, 1967, and 50 per centum of such costs for each of the three succeeding fiscal years" and inserting in lieu thereof "and for each of the three succeeding fiscal years, and 50 per centum of such costs for the fiscal year ending June 30, 1970, and for each of the three succeeding fiscal years".

(b) The amendment made by subsection (a) of this section shall be effective with respect to grants awarded after the enactment of this Act.

AUTHORIZATION OF EXPERIMENTAL OR PILOT PROJECTS

SEC. 103. (a) Sections 107, 108, 109, 110, and 111 of the Higher Education Act of 1965, and references thereto, are redesignated as sections 108, 109, 110, 111, and 112, respectively, and there is inserted after 106 a new section as follows:

"EXPERIMENTAL PROJECTS

"SEC. 107. From the sums reserved therefor pursuant to paragraph (2) of section 103 for any fiscal year, the Commissioner is authorized to make grants to or contracts with institutions of higher education to pay all or part of the cost of experimental or pilot projects in the fields of community service or continuing education, with emphasis on innovative approaches and on the promotion of comprehensiveness and coordination in these fields. The Commissioner may also, from such sums, make grants to other public or private nonprofit agencies or organizations, or contracts with public or private organizations, including grants to or contracts with professional or scholarly associations, when such grants or contracts will make an especially significant contribution to attaining the objectives of this section."

(b) (1) Subsection (a) of section 103 of such Act is amended by inserting "(1)" immediately after "(a)", and by adding at the end thereof the following new paragraph:

"(2) Not to exceed 10 per centum of the sums appropriated pursuant to section 101 shall be reserved by the Commissioner for grants and contracts pursuant to section 107."

(2) Subsection (a) of section 103 of such Act is further amended by inserting after "each fiscal year," the following: "reduced by the sums reserved pursuant to paragraph (2)," and by inserting after "remainder of such sums" the following: "(as reduced by the sums reserved pursuant to paragraph (2))".

(3) The heading of such section 103 is amended by adding at the end thereof "—SET-ASIDE FOR SPECIAL PROJECTS".

(c) The amendments made by this section shall be effective with respect to appropriations pursuant to section 101 of such Act for fiscal years ending after June 30, 1967, except so much of any such appropriation as has been allotted prior to the enactment of this Act.

TITLE II—AMENDMENTS TO TITLE II OF HIGHER EDUCATION ACT OF 1965 (COLLEGE LIBRARIES, ETC.)

PART A—COLLEGE LIBRARY RESOURCES

EXTENSION OF PROGRAM

SEC. 201. (a) Section 201 of the Higher Education Act of 1965 is amended by striking out "$50,000,000 for the fiscal year ending June 30, 1966, and for each of the two succeeding fiscal years" and inserting in lieu thereof "$50,000,000 each for the fiscal years ending June 30, 1966, 1967, and 1968, respectively, and such sums as may be necessary for the next five fiscal years".

(b) Such section 201 is further amended by striking out the last sentence of such section.

REVISION OF MAINTENANCE-OF-EFFORT REQUIREMENT FOR SPECIAL PURPOSE GRANTS

SEC. 202. (a) Clause (2) of section 204(b) of the Higher Education Act of 1965 is amended by inserting after "June 30, 1965", the following: ", or during the two fiscal years preceding the fiscal year for which the grant is requested, whichever is less".

(b) The amendment made by subsection (a) shall be

effective with respect to applications for grants payable on or after the effective date of the enactment of this Act.

PART B—LIBRARY TRAINING AND RESEARCH, AND LIBRARY SCHOOL PROGRAM DEVELOPMENT

EXTENSION OF PROGRAM

SEC. 221. Section 221 of such Act is amended by striking out the second sentence thereof and by inserting "and such sums as may be necessary for each of the next five years," after "$15,000,000 for the fiscal year ending June 30, 1966, and for each of the two succeeding fiscal years,".

AUTHORIZING PLANNING AND DEVELOPMENT GRANTS FOR LIBRARY SCHOOLS

SEC. 222. (a) (1) Subsection (a) of section 224 of the Higher Education Act of 1965 is amended (1) by inserting "(1)" after "organizations,"; (2) by inserting after "such activities;" the following: "and, (2) for the planning or development of programs for the opening of library or information science schools, or of programs intended to lead to the accreditation of such existing schools;" and (3) by striking out "no such grant" and by inserting in lieu thereof "no grant under this section".

(2) The heading of such section is amended by adding ", AND GRANTS FOR LIBRARY SCHOOL PLANNING AND DEVELOPMENT" at the end thereof.

(b) The amendments made by paragraph (1) of subsection (a) of this section shall be effective with respect to grants payable from appropriations for fiscal years ending after June 30, 1967.

CLARIFYING AUTHORITY OF INSTITUTIONS TO USE TRAINING INSTITUTES

SEC. 223. Subsection (a) of section 223 of the Higher Education Act of 1965 is amended by inserting after "the cost of courses of training or study" the following: "(including short-term or regular session institutes)".

PART C—STRENGTHENING COLLEGE AND RESEARCH LIBRARY RESOURCES THROUGH LIBRARY OF CONGRESS

EXTENSION OF PROGRAM

SEC. 231. (a) Section 231 of the Higher Education Act of 1965 is amended by striking out "and" before "$7,770,000", and by inserting after "June 30, 1968," the following: "and such sums as may be necessary for the next two fiscal years,".

(b) Such section is further amended by striking out the last sentence.

CLARIFYING AUTHORITY TO PURCHASE COPIES; INCREASING AUTHORITY TO PREPARE CATALOG AND BIBLIOGRAPHIC MATERIALS; AUTHORIZING LIBRARIAN TO ACT AS ACQUISITIONS AGENT

SEC. 232. Section 231 of the Higher Education Act of 1965, as amended by section 231 of this Act, is further amended:

(1) in paragraph (1), by inserting "copies of" before "all";

(2) in paragraph (2), by striking out "providing catalog information for these materials promptly after receipt, and distributing bibliographic information by" and inserting in lieu thereof "providing catalog information promptly and distributing this and other bibliographic information about library materials by"; and

(3) by adding after paragraph (2) the following new paragraph:

"(3) enabling the Librarian of Congress to pay administrative costs of cooperative arrangements for acquiring library materials published outside of the United States, its territories, and its possessions, and not readily obtainable outside of the country of origin, for institutions of higher education or combinations

thereof for library purposes, or for other public or private nonprofit research libraries."

TITLE III—STRENGTHENING DEVELOPING INSTITUTIONS

EXTENSION OF PROGRAM

SEC. 301. Paragraph (1) of section 301(b) of the Higher Education Act of 1965 is amended by striking out "and the sum of $55,000,000 for the fiscal year ending June 30, 1968" and inserting in lieu thereof "the sum of $55,000,000 for the fiscal year ending June 30, 1968, and such sums as may be necessary for the next five fiscal years".

TITLE IV—STUDENT ASSISTANCE

PART A—AMENDMENTS TO EDUCATIONAL OPPORTUNITY GRANT PROGRAM

EXTENSION OF PROGRAM

SEC. 401. (a) The first sentence of subsection (b) of section 401 of the Higher Education Act of 1965 is amended by inserting after "two succeeding fiscal years," the following: "and such sums as may be necessary for the next five fiscal years,".

(b) (1) Such subsection (b) is further amended by striking out the second sentence thereof.

(2) Sections 405(b), 406(b), and 407(b)(2) of

such Act are each amended by striking out "third sentence" and inserting in lieu thereof "second sentence".

COUNTING WORK-STUDY ASSISTANCE TO STUDENT IN COMPUTING MAXIMUM ALLOWABLE EDUCATIONAL OPPORTUNITY GRANT

SEC. 402. (a) Section 402 (1) of the Higher Education Act of 1965 is amended by striking out ", but excluding assistance from work-study programs".

(b) The amendments to such Act made by the preceding subsection shall be effective with respect to educational opportunity grants awarded by an institution on or after September 1, 1967, or the date of the enactment of this Act, whichever date is later.

AUTHORIZING GRANTS (AS WELL AS CONTRACTS) FOR TALENT SEARCH

SEC. 403. Section 408 of the Higher Education Act of 1965 is amended by striking out ", to enter into contracts, not to exceed $100,000 per year, with State and local educational agencies and other public or nonprofit organizations and institutions" and inserting in lieu thereof the following: "to make grants to State or local educational agencies or other public or nonprofit private agencies, institutions, or organizations, or make contracts with public or private agen-

cies, institutions, or organizations, not to exceed (in the case of any contract or grant) $100,000 per year,".

PART B—AMENDMENTS TO PROVISIONS ON STUDENT LOAN INSURANCE PROGRAMS

AUTHORIZING DEFERMENT OF REPAYMENT OF STATE OR PRIVATELY INSURED LOAN DURING ATTENDANCE OF STUDENT BORROWER AT INSTITUTION OF HIGHER EDUCATION, OR DURING MILITARY, PEACE CORPS, OR VISTA SERVICE; REQUIRING DEFERRAL OF SUCH REPAYMENT OF FEDERALLY INSURED LOAN UNDER NATIONAL VOCATIONAL STUDENT LOAN INSURANCE ACT DURING VISTA SERVICE; AND AUTHORIZING FEDERAL PAYMENT OF ALL INTEREST ACCRUING DURING ANY SUCH ATTENDANCE OR SERVICE

SEC. 421. (a) (1) Section 428 of the Higher Education Act of 1965 and section 9 of the National Vocational Student Loan Insurance Act of 1965 are amended by adding at the end of each such section the following new subsection:

"(c) The Commissioner shall encourage the inclusion, in any State student loan program or any State or nonprofit private student loan insurance program meeting the requirements of subsection (a) (1) (B) or (C), of provisions authorizing or requiring that in the case of student loans covered by such program periodic installments of principal need not be paid, but interest shall accrue and be paid,

during any period (i) during which the borrower is pursuing a full-time course of study at an institution of higher education (or at a comparable institution outside the States approved for this purpose by the Commissioner), (ii) not in excess of three years during which the borrower is a member of the Armed Forces of the United States, (iii) not in excess of three years during which the borrower is in service as a volunteer under the Peace Corps Act, or (iv) not in excess of three years during which the borrower is in service as a volunteer under title VIII of the Economic Opportunity Act of 1964. In the case of any such State or nonprofit private program containing such a provision any such period shall be excluded in determining the period specified in clause (ii) of subparagraph (C), or the maximum period for repayment specified in subparagraph (D), of subsection (b) (1) of this section."

(2) (A) Subparagraph (C) (ii) of paragraph (1) of section 428(b) of the Higher Education Act of 1965 and subparagraph (C) (ii) of paragraph (1) of section 9(b) of the National Vocational Student Loan Insurance Act of 1965 are each amended by inserting after "(ii)" the following: "except as provided in subsection (c) of this section,".

(B) Subparagraph (D) of each such paragraph is amended by inserting after "subject to subparagraph (C)"

the following: "of this paragraph and except as provided by subsection (c) of this section".

(b) Subparagraph (C) of section 8(a)(2) of the National Vocational Student Loan Insurance Act of 1965 is amended (1) by striking out "or" before "(iii)", and (2) by inserting after "Peace Corps Act," the following: "or (iv) not in excess of three years during which the borrower is in service as a volunteer under title VIII of the Economic Opportunity Act of 1964,".

(c) The first sentence of paragraph (2) of section 428(a) of the Higher Education Act of 1965, and the first sentence of paragraph (2) of section 9(a) of the National Vocational Student Loan Insurance Act of 1965, are each amended by inserting after "repayment period of the loan," the following: "or which accrues during a period in which principal need not be paid (whether or not such principal is in fact paid) by reason of a provision described in subsection (c) of this section or in subsection (a)(2)(C) of the preceding section,".

(d) Deferment of repayment of principal, as provided in the amendments made by subsection (a) of this section, may be authorized (but not required) with respect to loans meeting the requirements of subparagraph (B) or (C) of section 428(a)(1) of the Higher Education Act of 1965, or of subparagraph (B) or (C) of section 9(a)(1) of the

National Vocational Student Loan Insurance Act of 1965, which are outstanding on the date of enactment of this Act, but only with respect to periods of attendance or service occurring on or after such date, or after June 30, 1967, whichever is later. The amendments made by subsection (b) shall be effective with respect to loans made by the Commissioner and, with the consent of the lender, loans insured by the Commissioner, which are outstanding on such date of enactment, but only with respect to periods of attendance or service occurring on or after such date or after June 30, 1967, whichever is later. The amendments made by subsection (c) shall become effective on the date of enactment of this Act or on July 1, 1967, whichever is later.

COORDINATION BETWEEN NON-FEDERAL AND FEDERAL PROGRAMS WITH RESPECT TO MAXIMUM AMOUNTS OF INDIVIDUAL LOANS INSURED AND MINIMUM AMOUNTS OF REPAYMENT INSTALLMENTS ON SUCH LOANS

Annual Maximum of $1,500, Aggregate Maximum of $7,500 for Higher Education

SEC. 422. (a) (1) Subparagraph (A) of section 428 (b) (1) of the Higher Education Act of 1965 is amended by inserting the following before the semicolon at the end of such subparagraph: ", which limit shall not be deemed exceeded by a line of credit under which actual payments by

the lender to the borrower will not be made in any such year in excess of such annual limit; and provides that the aggregate insured unpaid principal amount of all such insured loans made to any student shall not at any time exceed $7,500;".

(2) Paragraph (1) of section 425(a) of the Higher Education Act of 1965 is amended (1) by striking out "in the case of a graduate or professional student (as defined in regulations of the Commissioner), or $1,000 in the case of any other student" in the first sentence, and (2) by striking out "in the case of any graduate or professional student (as defined in regulations of the Commissioner, and including any such insured loans made to such person before he became a graduate or professional student), or $5,000 in the case of any other student" in the second sentence.

Annual Maximum of $1,500, Aggregate Maximum of $3,000, for Vocational Education

(b) (1) Subparagraph (A) of section 9(b)(1) of the National Vocational Student Loan Insurance Act of 1965 is amended to read as follows:

"(A) provides that the program will insure loans made to any individual student in any academic year or its equivalent (as determined under regulations of the Commissioner) of up to but not in excess of $1,500, which limit shall not be deemed exceeded by a line of

credit under which actual payments by the lender to the borrower will not be made in any such year in excess of such annual limit; and provides that the aggregate insured unpaid principal amount of all insured loans under the program made to any student shall not at any time exceed $3,000;".

(2) Subsection (a) of section 6 of the National Vocational Student Loan Insurance Act of 1965 is amended (1) by striking out "$1,000" in the first sentence and inserting "$1,500" in lieu thereof, and (2) by striking out "$2,000" in the second sentence and inserting "$3,000" in lieu thereof.

Minimum Annual Repayments for Higher and Vocational Education

(c) Paragraph (1) of section 428(b) of the Higher Education Act of 1965 and paragraph (1) of section 9(b) of the National Vocational Student Loan Insurance Act of 1965 are each amended (1) by striking out the period at the end of subparagraph (J) and inserting a semicolon in lieu thereof, and (2) by adding at the end of subparagraph (J) the following:

"(K) provides that the total of the payments by a borrower during any year of any repayment period with respect to the aggregate amount of all loans to that borrower which are insured under the program shall not be less than $360 or the balance of all such

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loans (together with interest thereon), whichever amount is less."

(d) (1) The amendments made by this section shall apply to loans made on or after the sixtieth day after the date of enactment of this Act. In computing the maximum amounts which may be borrowed by a student, and the minimum amounts of repayment allowable with respect to sums borrowed by a student, after such sixtieth day there shall be included all loans, whenever made, insured pursuant to the insurance program under which the computation is made.

(2) Paragraph (1) of this subsection shall not apply so as to require violation of any commitment for insurance made to an eligible lender, or of any line of credit granted to a student prior to such sixtieth day or, except with the consent of the State or nonprofit private agency concerned, impair the obligation of any agreement made pursuant to section 428(b) of the Higher Education Act of 1965 or section 9(b) of the National Vocational Student Loan Insurance Act of 1965.

EXTENSION OF FEDERAL LOAN INSURANCE PROGRAM

SEC. 423. (a) Subsection (a) of section 424 of the Higher Education Act of 1965 is amended (1) in the first sentence by striking out "and $1,400,000,000 in the fiscal year ending June 30, 1968" and inserting in lieu thereof

"and such limitation in the six succeeding fiscal years as may be specified in appropriations Acts, except that in the fiscal year ending June 30, 1968, such amount shall not exceed the lesser of any such limitation specified for that year and $1,400,000,000"; and (2) in the second sentence by striking out "1972" and inserting in lieu thereof "1977".

(b) Subsection (a) of section 5 of the National Vocational Student Loan Insurance Act of 1965 is amended (1) in the first sentence by striking out "and in each of the two succeeding fiscal years" and inserting in lieu thereof "and such limitations as may be specified in appropriations Act for each of the seven succeeding fiscal years, except that for the fiscal year ending June 30, 1968, such amount shall not exceed the lesser of such limitation and $75,000,000"; and (2) in the second sentence by striking out "1972" and inserting in lieu thereof "1977".

TECHNICAL CORRECTIONS

SEC. 424. (a) (1) Section 2 (a) of the National Vocational Student Loan Insurance Act of 1965 is amended by striking "9 (a) (1) (A)" and inserting in lieu thereof "9 (a) (1) (C)".

(2) Section 5 of such Act is amended (A) by inserting "FEDERAL" before "LOAN INSURANCE" in the caption, and (B) by inserting, in subsection (a), "Federal" before

"insurance" in the first sentence and "Federal" before "insurance pursuant to this part" in the second sentence.

(3) Section 6 of such Act is amended (A) by inserting "UNDER FEDERAL INSURANCE PROGRAM" in the caption after "LIMITATIONS", (B) by inserting "Federal" before "insurance" in the first sentence of subsection (a), and (C) by inserting "federally" before "insured" in the first sentence of subsection (b).

(4) Section 8 of such Act is amended (A) by inserting "UNDER FEDERAL INSURANCE PROGRAM" after "LOANS" in the caption, and (B) by inserting "by the Commissioner" after "insurable" in the introductory phrase of subsection (a).

(5) Clause (A) of the first sentence of section 9(a)(1) of such Act is amended by inserting "by the Commissioner" after the word "insured".

(b) The second sentence of 435(a) of the Higher Education Act of 1965, as amended by the International Education Act of 1966 to make students in comparable institutions abroad eligible under the reduced-interest loan insur-

ance program, is further amended by inserting ", with respect to students who are nationals of the United States," after "Such term includes".

PART C—AMENDMENTS TO COLLEGE WORK-STUDY PROGRAM

EXTENSION OF PROGRAM

SEC. 431. The first sentence of section 442 of the Higher Education Act of 1965 is amended (1) by striking out "and" before "$200,000,000", and (2) by inserting after "June 30, 1968," the following: "and such sums as may be necessary for the next five fiscal years,".

EIGHTY PER CENTUM FEDERAL MATCHING

SEC. 432. (a) Paragraph (f) of section 124 of the Economic Opportunity Act of 1964 is amended by striking out "75 per centum" and inserting in lieu thereof "80 per centum".

(b) The amendment made by the preceding subsection shall be effective with respect to work performed by a student on or after August 21, 1967, or on or after the date of enactment of this Act, whichever date is later.

AUTHORIZING WORK-STUDY EMPLOYMENT OF FORTY HOURS A WEEK FOR STUDENTS ENROLLED IN CLASSES DURING VACATION PERIODS

SEC. 433. (a) Paragraph (d) of section 124 of the Economic Opportunity Act of 1964 is amended to read as follows:

"(d) provide that no student shall be employed under such work-study program for more than fifteen hours in any week in which classes in which he is enrolled are in session, except that, to the extent and in accordance with criteria established by or pursuant to regulations of the Commissioner, such maximum work week shall be forty hours with respect to classes conducted in vacation or comparable periods of additional or nonregular enrollment (as respects the particular student);".

(b) The amendment made by the preceding subsection shall be effective with respect to work performed on or after the date of enactment of this Act.

REVISING MAINTENANCE-OF-EFFORT REQUIREMENT TO TAKE INTO ACCOUNT ADDITIONAL FORMS OF INSTITUTIONAL STUDENT AID

SEC. 434. (a) Paragraph (e) of section 124 of the Economic Opportunity Act of 1964 is amended to read as follows:

"(e) provide assurance that in each fiscal year dur-

ing which the agreement remains in effect the institution will expend in its own programs of student assistance (including student assistance through employment of its students, whether or not in employment eligible for assistance under this part), exclusive of any component of such expenditures representing payment to the institution of Federal financial assistance as determined in accordance with regulations of the Commissioner, an amount that is not less than its average annual expenditure for such purposes during the three fiscal years preceding the fiscal year in which the agreement is entered into;".

(b) The amendment made by the preceding subsection shall be effective with respect to grants made under any agreement on or after the effective date of the enactment of this Act, or after June 30, 1968, whichever is later.

AUTHORIZING PROPRIETARY INSTITUTIONS TO CONDUCT WORK-STUDY PROGRAMS FOR OFF-CAMPUS WORK OF THEIR STUDENTS FOR PUBLIC OR PRIVATE NONPROFIT ORGANIZATIONS

SEC. 435. (a) Paragraph (a) of section 124 of the Economic Opportunity Act of 1964 is amended by inserting after "work for the institution itself" the following: "but only in the case of a public or other nonprofit institution,".

(b) Paragraph (1) of section 123 (b) of such Act is amended (1) by striking out "(D) is a public or other nonprofit institution," in the first sentence thereof; (2) by striking out "(D)," in the second sentence of such paragraph; and (3) by striking out "(E)" wherever it appears in such paragraph and inserting "(D)" in lieu thereof.

(c) Paragraph (1) of section 122 (b) is amended by striking out all of that paragraph following the words "full-time basis" the first time these words occur, and inserting in lieu thereof the following: "in public or other nonprofit institutions of higher education in such State bears to the total number of persons enrolled on a full-time basis in such institutions in all the States,".

(d) The amendments made by this section shall be effective only with respect to work performed on or after the date of enactment of this Act, or after June 30, 1967, whichever is later.

PROVIDING FOR INSTITUTIONAL EXPENSES OF ADMINISTRATION OF COOPERATIVE-EDUCATION DEMONSTRATION PROGRAMS

SEC. 436. (a) Sections 125 and 126 of the Economic Opportunity Act of 1964 are redesignated as sections 126 and 127, respectively, and the following new section is inserted immediately following section 124:

"USE OF WORK-STUDY FUNDS FOR ADMINISTRATIVE EXPENSES OF COOPERATIVE-EDUCATION PROGRAMS

"SEC. 125. (a) An agreement entered into pursuant to section 124 may also include provisions authorizing the institution, to the extent and under terms and conditions prescribed by the Commissioner by or pursuant to regulation, to use, out of the sums granted to it under section 123, a portion for its administrative expenses (which for this purpose may, among other expenses, include expenses of counseling and guidance, placement, and consulting services) in developing or carrying out a program, described in such agreement, to demonstrate or explore the feasibility or value of methods of cooperative education involving alternative periods of full-time academic study at the institution and periods of full-time public or private employment (whether or not afforded by an organization described in section 124(a)) approved or arranged for by the institution under such program. The Commissioner may, if in his judgment it would promote efficiency and economy to do so, prescribe regulations applicable both to administrative expenses for which an institution may use work-study funds under this section and to administrative expenses for which it may use such funds under section 124(b) and to the determination of the amounts allowable for such expenses from such funds, and

such regulations shall, to the extent (if any) provided therein, supersede with respect to administrative expenses referred to in section 124(b) the limitations specified therein.

"(b) The question of the authority of the institution to use funds obtained under section 123 to pay for particular work performed by a student under a cooperative-education program covered under this section by an agreement with the Commissioner shall be determined solely by reference to the provisions included in the agreement pursuant to section 124."

(b) Section 124(b) of such Act is amended by inserting "except as otherwise provided under section 125," before "provide".

WORK-STUDY PROGRAM RECONSTITUTED AS PART C OF TITLE IV, HIGHER EDUCATION ACT OF 1965

SEC. 437. (a) The purpose of this section is to reconstitute part C of title I of the Economic Opportunity Act of 1964 (as amended by the foregoing sections of this Act) as part C of title IV of the Higher Education Act of 1965, without substantive change.

(b) (1) So much of part C of title IV of the Higher Education Act of 1965 (including the heading of such part) as precedes section 442 thereof is deleted (but without thereby affecting the amendments heretofore made by that part to parts C and D of title I of the Economic Opportunity

Act of 1964); (2) such section 442 (as amended by this Act) and references thereto, are redesignated as section 448; (3) part C of title I of the Economic Opportunity Act of 1964 (as amended by the foregoing sections of this Act) is deleted from that Act (but without repeal thereof) and is inserted (as captioned) as part C in title IV of the Higher Education Act of 1965 immediately before the section of such title redesignated as section 448; and (4) the sections so transferred (which are numbered 121, 122, 123, 124, 125, 126, and 127), and internal cross-references therein to any such section, are redesignated as sections 441, 442, 443, 444, 445, 446, and 447, respectively.

(c) Wherever in any law, rule, regulation, order, or agreement of the United States (including the first sentence of the section redesignated by paragraph (1) as section 448 of title IV of the Higher Education Act of 1965), reference is made, however styled, to part C of title I of the Economic Opportunity Act of 1964, or to any section thereof, such reference is amended so as to make comparable reference to part C of title IV of the Higher Education Act of 1965, or to such section of that part as redesignated herein, respectively.

(d) Subject to the provisions of subsection (c), any order, rule, regulation, right, agreement, or application in

effect under part C of title I of the Economic Opportunity Act of 1964 immediately prior to the enactment of this Act, shall continue in effect to the same extent as if this section had not been enacted.

(e) (1) The section of title IV of the Higher Education Act of 1965 redesignated by this section as section 448 of that title, as amended by this Act, is further amended by deleting all that follows the first sentence of that section but without thereby affecting the effect of such deleted matter.

(2) Appropriations made for carrying out part C of title I of the Economic Opportunity Act of 1964 which is reconstituted by this section as part C of title IV of the Higher Education Act of 1965 shall be deemed made for carrying out such part C of such title IV.

PART D—AMENDMENTS TO NATIONAL DEFENSE STUDENT LOAN PROGRAM

EXTENSION OF PROGRAM

SEC. 451. (a) Section 201 of the National Defense Education Act of 1958 is amended (1) by striking out "and" before "$225,000,000", (2) by inserting after "June 30, 1968," the following: "and such sums as may be necessary for each of the five succeeding fiscal years;" and (3) by striking out "and such sums for the fiscal year ending June 30, 1969" and inserting in lieu thereof "and there

are further authorized to be appropriated such sums for the fiscal year ending June 30, 1974".

(b) Section 202 of such Act is amended by striking out "1968" in subsections (a) and (b) and inserting in lieu thereof "1973".

(c) Section 206 of such Act is amended by striking out "1972" each time it appears in subsections (a), (b), and (c) of such section, and inserting in lieu thereof "1977".

MAKING 10 PER CENTUM LOAN CANCELLATION APPLICABLE TO TEACHER SERVICE FOR CERTAIN SPECIAL PROGRAMS CONDUCTED BY NONPROFIT INSTITUTIONS

SEC. 452. (a) So much of paragraph (3) of section 205(b) of the National Defense Education Act of 1958 as precedes clause (A) thereof is amended by inserting the following immediately before "at the rate of 10 per centum": "or for comparable service as a full-time teacher in a program of special (including preschool) education or training designed to combat disadvantage, poverty, or unemployment which is conducted by such a school or institution or by another public or nonprofit agency, institution, or organization in a State,".

(b) The amendments made by this section shall apply with respect to teaching service performed during academic years beginning on or after the date of enactment of this

Act, whether the loan was made on, before, or after such date.

ENCOURAGING AVAILABILITY OF NON-FEDERAL CAPITAL FOR NATIONAL DEFENSE STUDENT LOANS BY ESTABLISHING A REVOLVING FUND FROM WHICH INSTITUTIONS MAY OBTAIN LOANS TO CAPITALIZE STUDENT LOAN FUNDS, AND PROVIDING FOR ALLOTMENT OF FEDERAL CAPITAL CONTRIBUTIONS TO SUCH FUNDS

SEC. 453. (a) (1) Section 207 of the National Defense Education Act of 1958 (relating to loans to institutions to help finance their student loan funds) is amended to read as follows:

"LOANS TO INSTITUTIONS; REVOLVING FUND

"Loans to Institutions

"SEC. 207. (a) (1) During the period of six fiscal years beginning with the fiscal year ending June 30, 1968, the Commissioner may make loans, from the National Defense Education Loan Fund established by subsection (d), to institutions of higher education to provide all or part of the capital needed by them for making loans to students (other than capital needed to finance the institutional contribution to a student loan fund established with the aid of Federal capital contributions pursuant to an agreement under section 204). Loans to students from such borrowed sums shall be subject to the terms, conditions, and limitations set forth in

section 205. The requirement in section 204(2)(B) with respect to institutional contributions to student loan funds established under that section shall not apply to loans made to institutions under this section.

"(2) Loans to institutions under this section may be upon such terms and conditions, consistent with applicable provisions of section 204, as the Commissioner deems appropriate, including a requirement that the proceeds of such loan be deposited by the institution in a separate student loan fund established and maintained, in accordance with regulations, solely for operations in connection therewith (or, in accordance with such regulations, in a segregated account so established and maintained within a student loan fund established pursuant to an agreement under section 204, in which event such account shall be treated as a separate fund for the purposes of this title). If the Commissioner deems it to be necessary to assure that the purposes of this section will be achieved, these terms and conditions may also include provisions making the institution's obligation to the Commissioner on such a loan payable solely from such revenues or other assets or security (including collections on loans to students) as the Commissioner may approve. Such a loan shall bear interest at a rate which the Commissioner determines to be adequate

to cover (A) the cost of the funds to the Treasury as determined by the Secretary of the Treasury, taking into consideration the current average yields of outstanding marketable obligations of the United States having maturities comparable to the maturities of loans made by the Commissioner under this section, (B) the estimated cost of administering this section, and (C) probable losses.

"PAYMENTS TO INSTITUTIONS TO COVER CERTAIN COSTS INCURRED IN MAKING STUDENT LOANS FROM BORROWED FUNDS

"(b) If an institution of higher education borrows from the Commissioner from the national defense education loan fund established under subsection (d), the Commissioner shall agree to pay to the institution (1) an amount equal to 90 per centum of the loss to the institution from defaults on student loans made from the student loan fund (or account) established pursuant to paragraph (2) of subsection (a), (2) the amount by which the interest payable by the institution on the Commissioner's loan exceeds the interest received by it on student loans made from such student loan fund (or account), (3) an amount equal to so much of the expenses of the institution arising out of its operation of such student loan fund (or account) as would be allowable under paragraphs (3) (C) and (D) of section 204 if such fund (or account) were established under that section, and (4)

the amount of principal which is canceled pursuant to section 205 (b) (3) with respect to student loans made from such student loan fund (or account). There are authorized to be appropriated without fiscal-year limitation such sums as may be necessary to carry out the purposes of this subsection.

"LIMITATION ON LOANS FROM REVOLVING FUND

"(c) The total of the loans made in any fiscal year from the national defense education loan fund established by subsection (d) shall not exceed such limitations as may be specified for such year in appropriation Acts.

"REVOLVING FUND

"(d) (1) There is hereby created within the Treasury a national defense education loan fund (hereafter in this section called the fund) which shall be available to the Commissioner without fiscal-year limitation as a revolving fund for the purposes of this section. A business-type budget for the fund shall be prepared, transmitted to the Congress, considered and enacted in the manner prescribed by law (sections 102, 103, and 104 of the Government Corporation Control Act, 31 U.S.C. 847–849) for wholly owned Government corporations.

"(2) The fund shall consist of appropriations paid into the fund pursuant to section 201, all amounts received by the Commissioner as interest payments or repayments of principal on loans, and any other moneys, property, or

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assets derived by him from his operations in connection with this section (other than subsection (b)), including any moneys derived directly or indirectly from the sale of assets, or beneficial interests or participations in assets, of the fund.

"(3) All loans, expenses (other than normal administrative expenses), and payments pursuant to operations of the Commissioner under this section (other than subsection (b)) shall be paid from the fund, including (but not limited to) expenses and payments of the Commissioner in connection with the sale, under section 302(c) of the Federal National Mortgage Association Charter Act, of participations in obligations acquired under this section. From time to time, and at least at the close of each fiscal year, the Commissioner shall pay from the fund into the Treasury as miscellaneous receipts interest on the cumulative amount of appropriations paid into the fund as capital for loans under this section less the average undisbursed cash balance in the fund during the year. The rate of such interest shall be determined by the Secretary of the Treasury, taking into consideration the average market yield during the month preceding each fiscal year on outstanding Treasury obligations of maturity comparable to the average maturity of loans made from the fund. Interest payments may be deferred with approval of the Secretary of the Treasury, but

any interest payments so deferred shall themselves bear interest. The Commissioner shall also from time to time (not less often than annually) transfer from the fund, to the credit of the appropriation (current at the time of such transfer) for salaries and expenses of the Office of Education, an amount that in his judgment constitutes a reasonable estimate of the normal administrative expenses of the Office incurred, or to be incurred, in connection with operations of the Commissioner under this section during the period covered by the transfer. If at any time the Commissioner determines that moneys in the fund exceed the present and any reasonably prospective future requirements of the fund, such excess may be transferred to the general fund of the Treasury."

(2) Section 201 of the National Defense Education Act of 1958 is amended by striking out the last sentence and substituting therefor the following: "Sums appropriated under this section shall be available (1) in accordance with agreements between the Commissioner and institutions of higher education, for payment of Federal capital contributions which, together with contributions from the institutions, shall be used for establishment and maintenance of student loan funds in accordance with agreements pursuant to section

204, and (2) to the extent determined by the Commissioner not to be required for the foregoing purpose, for payments into the loan fund established by section 207(d)."

(3) Section 208 of such Act is amended by substituting "title" for "subsection" in the parenthetical phrase.

(b) (1) Section 202 of the National Defense Education Act of 1958 (relating to allotments of appropriations among States), as amended by section 451 of this Act, is further amended by inserting "(for payment as Federal capital contributions or as loans to institutions under section 207)" after "the Commissioner shall allot to each State" in the first sentence of subsection (a), and by redesignating subsection (b) as subsection (c) and inserting after subsection (a) the following new subsection:

"(b) Funds available in any fiscal year for payment to institutions under this title (whether as Federal capital contributions or as loans to institutions under section 207) which are in excess of the amount appropriated pursuant to section 201 for that year shall be allotted among the States in such manner as the Commissioner determines will best carry out the purpose of this Act."

(2) Section 203 of such Act (relating to the payment

of Federal capital contributions to institutions), including the heading thereof, is amended to read as follows:

"DISTRIBUTION AMONG INSTITUTIONS OF FEDERAL CAPITAL CONTRIBUTIONS AND INSTITUTIONAL LOANS

"SEC. 203. (a) The Commissioner shall from time to time set dates by which institutions of higher education in a State must file applications for Federal capital contributions, and for loans pursuant to section 207, from the allotment of such State under section 202 (a). In the event the total requested in such applications (which meet the requirements established in regulations of the Commissioner) exceeds the amount of such allotment of such State available for such purpose, the total of the Federal capital contributions and loans from such allotment to each such institution shall bear the same ratio to the amount requested in its application as the amount of such allotment available for such purpose bears to the total requested in all such applications. In the event the total requested in such applications which are made by institutions in a State is less than the amount of the allotment of such State available for such purpose, the Commissioner may reallot the remaining amount from time to time, on such date or dates as the Commis-

sioner may fix, to other States in proportion to the original allotments to such States under section 202 for such year.

"(b) Sums allotted among States pursuant to section 202(b) shall be allocated among institutions within States in such manner as the Commissioner determines will best carry out the purposes of this Act.

"(c) The Federal capital contribution to an institution shall be paid to it from time to time in such installments as the Commissioner determines will not result in unnecessary accumulations in the student loan fund established under its agreement under section 204 of this title."

(c) (1) So much of section 206(a) of such Act as precedes paragraph (1) is amended by striking out "this title" and inserting in lieu thereof "an agreement pursuant to section 204".

(2) Paragraph (1) of such section 206(a) is amended by striking out "the balance" and inserting in lieu thereof "such balance";

(3) Such section 206 is further amended by adding at the end thereof the following subsection:

"(d) Subsections (a) and (c) shall not apply to a separate student loan fund or account established by an

institution pursuant to section 207 (a) (2) of such Act with the proceeds of a loan to the institution from the national defense education loan fund, and subsection (b) shall not apply to amounts of principal or interest on student loans made from such separate student loan fund or account."

(d) (1) The amendments made by this section shall be effective in the case of payments to student loan funds made on or after June 30, 1967, or on or after the date of enactment of this Act, whichever date is later, except that such amendments shall not be effective with respect to payments pursuant to commitments (made prior to enactment of this Act) to make loans under section 207 of the National Defense Education Act of 1958 as in effect prior to the enactment of this Act.

(2) The Commissioner of Education is authorized, at the request of any institution, to take such steps as are necessary to convert a Federal capital contribution to a student loan fund of such institution, made pursuant to title II of the National Defense Education Act from funds appropriated pursuant to section 201 for the fiscal year ending June 30, 1968, to a loan under section 207 as amended by this Act.

PART E—AMENDMENTS TO NATIONAL DEFENSE FELLOWSHIP PROGRAM

EXTENSION OF PROGRAM

SEC. 471. (a) Section 402 (a) of the National Defense Education Act of 1958 is amended by striking out "two succeeding fiscal years" and inserting in lieu thereof "seven succeeding fiscal years".

(b) Section 403 (a) of such Act is amended by striking out "three succeeding fiscal years" and inserting in lieu thereof "eight succeeding fiscal years".

INCREASING MAXIMUM LENGTH OF FELLOWSHIP FROM 3 TO 4 YEARS IN SPECIAL CIRCUMSTANCES, AND REQUIRING INSTITUTIONAL EFFORT TO ENCOURAGE RECIPIENTS TO ENTER OR CONTINUE TEACHING

SEC. 472. (a) Subsection (a) of section 402 of the National Defense Education Act of 1958 is amended by inserting "(1)" after "except" in the second sentence thereof, and by inserting immediately before the period at the end of such sentence the following: ", and (2) that the Commissioner may provide by regulation for the granting of such fellowships for a period of study not to exceed one academic year (or one calendar year in the case of fellowships to which

clause (1) applies) in addition to the maximum period otherwise applicable, under special circumstances in which the purposes of this title would most effectively be served thereby".

(b) The Commissioner may in his discretion increase, in accordance with the amendment made by subsection (a), the maximum periods of fellowships awarded prior to the enactment of this Act.

(c) The second sentence of section 403 (a) is amended by striking out the period at the end of clause (2) of such sentence and inserting ", and" in lieu thereof; and by adding the following new clause:

"(3) that the application contains satisfactory assurance that the institution will make reasonable continuing efforts to encourage recipients of fellowships under this title, enrolled in such program, to teach or continue to teach in institutions of higher education."

(d) The amendment made by subsection (c) of this section shall be effective with respect to fellowships awarded on or after June 30, 1967, or on or after the date of enactment of this Act, whichever date is later.

REQUIRING STIPENDS TO BE SET IN AN AMOUNT CONSISTENT WITH THOSE AWARDED FOR COMPARABLE FELLOWSHIPS

SEC. 473. (a) Section 404 (a) of the National Defense Education Act of 1958 is amended to read as follows:

"SEC. 404. (a) The Commissioner shall pay to persons awarded fellowships under this title such stipends (including such allowances for subsistence and other expenses for such persons and their dependents) as he may determine to be consistent with prevailing practices under comparable federally supported programs."

(b) The amount of any stipend payable with respect to a fellowship awarded prior to the date of enactment of this Act shall not, during the period for which such fellowship was awarded, be less with respect to any year of study than the amount that would in the absence of the amendment made by subsection (a) of this section be payable with respect to such year.

PART F—ADVISORY COUNCIL ON STUDENT AID

ESTABLISHMENT OF ADVISORY COUNCIL ON ALL FINANCIAL AID TO STUDENTS; ABSORPTION OF ADVISORY COUNCILS ON INSURED LOANS

SEC. 481. (a) Title IV of the Higher Education Act of 1965 is amended by adding after part D the following new part:

"PART E—ADVISORY COUNCIL ON FINANCIAL AID TO STUDENTS

"SEC. 481. (a) There is established in the Office of Education an Advisory Council on Financial Aid to Students (hereafter in this section referred to as the 'Council'), consisting of the Commissioner, who shall be Chairman, and of members appointed by the Commissioner without regard to the civil service or classification laws. Such appointed members shall include leading authorities in the field of education, persons representing State and private nonprofit loan insurance programs, financial and credit institutions, and institutions of higher education and other eligible institutions as those terms may be variously defined in this Act, in the National Vocational Student Loan Insurance Act of 1965, or in the National Defense Education Act of 1958.

"(b) The Council shall advise the Commissioner on matters of general policy arising in the administration by the Commissioner of programs relating to financial assistance to students and on evaluation of the effectiveness of these programs.

"(c) Members of the Council who are not in the regular full-time employ of the United States shall, while attending meetings or conferences of the Council or otherwise engaged in the business of the Council, be entitled to receive

compensation at a rate fixed by the Secretary, but not exceeding $100 per diem (or, if higher, the rate specified at the time of such service for grade GS–18 in section 5332 of title 5, United States Code), including traveltime, and while so serving on the business of the Council away from their homes or regular places of business they may be allowed travel expenses, including per diem in lieu of subsistence, as authorized by section 5703 of title 5, United States Code, for persons employed intermittently in the Government service.

"(d) The Commissioner is authorized to furnish to the Council such technical assistance, and to make available to it such secretarial, clerical, and other assistance and such pertinent data available to him, as the Council may require to carry out its functions."

(b) (1) Section 433 of such Act, providing for establishment of an Advisory Council on Insured Loans to Students is repealed, and sections 434 and 435 are redesignated as sections 433 and 434, respectively.

(2) Section 15 of the National Vocational Student Loan Insurance Act of 1965, providing for establishment of an Advisory Council on Insured Loans to Vocational Students is repealed, and sections 16 and 17 of such Act are redesignated as sections 15 and 16, respectively.

TITLE V—EDUCATION PROFESSIONS DEVELOPMENT (AMENDMENTS TO TITLE V OF HIGHER EDUCATION ACT OF 1965)

STATEMENT OF PURPOSE

SEC. 501. It is the purpose of this title to coordinate, broaden, and strengthen programs for the training and improvement of the qualifications of teachers and other educational personnel for all levels of the American educational system so as to provide a better foundation for meeting the critical needs of the Nation for personnel in these areas.

AMENDMENTS TO PART A (GENERAL PROVISIONS) OF TITLE V OF HIGHER EDUCATION ACT OF 1965

SEC. 502. Title V of the Higher Education Act of 1965 is amended by—

(a) striking out "TEACHER PROGRAMS" in the heading of such title and inserting in lieu thereof "EDUCATION PROFESSIONS DEVELOPMENT";

(b) redesignating section 502 as section 508; and

(c) striking out section 501 and inserting in lieu thereof the following sections:

"STATEMENT OF PURPOSE

"SEC. 501. The purpose of this title is to improve the quality of teaching and to help meet critical shortages of ade-

quately trained educational personnel by (1) developing information on the actual needs for educational personnel, both present and long range, (2) providing a broad range of high quality training and retraining opportunities, responsive to changing manpower needs; (3) attracting a greater number of qualified persons into the teaching profession; (4) attracting persons who can stimulate creativity in the arts and other skills to undertake short-term or long-term assignments in education; and (5) helping to make educational personnel training programs more responsive to the needs of the schools and colleges.

"NATIONAL ADVISORY COUNCIL ON EDUCATION PROFESSIONS DEVELOPMENT

"SEC. 502. (a) There is hereby established in the Department of Health, Education, and Welfare a National Advisory Council on Education Professions Development (hereafter in this section referred to as the 'Council'), consisting of members appointed by the President without regard to the civil service and classification laws and, in addition, the Commissioner and one representative each from the National Science Foundation and the National Foundation on the Arts and the Humanities. The appointed members, one of whom shall be designated by the President as Chairman, shall include persons broadly representative of the fields of education, the arts, the sciences, and the humanities, and

of the general public, and a majority of them shall be engaged in teaching or in the education of teachers.

"(b) The Council shall, in addition to performing the functions set forth in subsection (c), advise the Secretary and the Commissioner with respect to policy matters arising in the administration of this title and any other matters, relating to the purposes of this title, on which their advice may be requested.

"(c) The Council shall from time to time review the operation of this title and of all other Federal programs for the training and development of educational personnel and shall evaluate their effectiveness in meeting needs for additional educational personnel, and in achieving improved quality in training programs as evidenced in the competency of the persons receiving such training when entering positions in the field of education. The Council shall make annual reports of its findings and recommendations (including recommendations for changes in this title and other Federal laws relating to educational personnel training) to the Secretary for transmittal to the President, who shall transmit such reports to the Congress together with his comments and recommendations.

"(d) Members of the Council who are not in the regular full-time employ of the United States shall, while serving on the business of the Council, be entitled to receive compen-

sation at rates fixed by the Secretary, but not exceeding $100 per day (or, if higher, the rate specified at the time of such service for grade GS–18 in section 5332 of title 5, United States Code), including traveltime, and, while so serving away from their homes or regular places of business, may be allowed travel expenses, including per diem in lieu of subsistence, as authorized by section 5703 of title 5, United States Code, for persons in the Government service employed intermittently.

"(e) The Secretary shall make available to the Council such technical, secretarial, clerical, and other assistance and such pertinent data prepared by the Department of Health, Education, and Welfare as it may require to carry out its functions. The Secretary may also assist the Council by utilizing for that purpose the services and facilities of any other agency of the Federal Government, in accordance with agreements (on a reimbursable basis or otherwise) between him and the head of such agency.

"APPRAISING EDUCATION PERSONNEL NEEDS

"SEC. 503. (a) The Commissioner shall from time to time appraise the Nation's existing and future personnel needs in the field of education, including preschool programs, elementary and secondary education, vocational and technical education, adult education, and higher education, and the adequacy of the Nation's efforts to meet these needs. In

developing information relating to educational personnel needs, the Commissioner shall consult with the Department of Labor, the National Science Foundation, the National Foundation on the Arts and the Humanities, and other appropriate public and private agencies.

"(b) The Commissioner shall prepare and publish annually a report on the education professions, in which he shall present in detail his views on the state of the education professions and the trends which he discerns with respect to the future complexion of programs of education throughout the Nation and the needs for well-educated personnel to staff such programs. The report shall indicate the Commissioner's plans concerning the allocation of Federal assistance under this title in relation to the plans and programs of other Federal agencies.

"ATTRACTING QUALIFIED PERSONS TO THE FIELD OF EDUCATION

"SEC. 504. The Commissioner is authorized to make grants to, or contracts with, State or local educational agencies, institutions of higher education, or other public or nonprofit agencies, organizations, or institutions, or to enter into contracts with public or private agencies, institutions, or organizations, for the purpose of—

"(a) identifying capable youth in secondary schools who may be interested in careers in education and en-

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couraging them to pursue postsecondary education in preparation for such careers;

"(b) publicizing available opportunities for careers in the field of education;

"(c) encouraging qualified persons to enter or reenter the field of education; or

"(d) encouraging artists, craftsmen, artisans, scientists, and persons from other professions and vocations, and homemakers to undertake teaching or related assignments on a part-time basis or for temporary periods.

"CONSULTATION

"SEC. 505. In the development and review of grant and contract programs under this title the Commissioner shall consult with the National Science Foundation and the National Foundation on the Arts and the Humanities to promote coordinated planning of programs to train educational personnel.

"TRANSFER OF FUNDS

"SEC. 506. In addition to the authority for utilization of other agencies conferred by section 803 (b) of this Act, funds available to the Commissioner for grants or contracts under this title shall, with the approval of the Secretary, be available for transfer to any other Federal agency for use (in ac-

cordance with an interagency agreement) by such agency (alone or in combination with funds of that agency) for purposes for which such transferred funds could be otherwise expended by the Commissioner under the provisions of this title, and the Commissioner is likewise authorized to accept and expend funds of any other Federal agency for use under this title.

"EXPERTS AND CONSULTANTS

"SEC. 507. The Commissioner may employ experts and consultants, as authorized by section 3109 of title 5, United States Code, to advise him with respect to the making of grants and contracts and the approving of programs under this title. Experts and consultants employed pursuant to this section may be compensated while so employed at rates not in excess of $100 per day (or, if higher, the rate specified at the time of such service for grade GS–18 in section 5332 of title 5, United States Code), including travel-time, and, while so serving away from their homes or regular places of business, may be allowed travel expenses, including per diem in lieu of subsistence, as authorized by section 5703 of title 5, United States Code, for persons in the Government service employed intermittently."

EXTENDING TEACHER FELLOWSHIP PROGRAM TO INCLUDE GRADUATE EDUCATION FOR PRESCHOOL AND ADULT AND VOCATIONAL EDUCATION PERSONNEL

SEC. 503. (a) The heading of part C of title V of the Higher Education Act of 1965 is amended by inserting "AND RELATED EDUCATIONAL PERSONNEL" after "FELLOWSHIPS FOR TEACHERS".

(b) (1) The first sentence of section 521 of the Higher Education Act of 1965 is amended (A) by striking out "elementary and secondary schools" and inserting in lieu thereof "schools", and (B) by inserting "or postsecondary vocational education" after "career in elementary or secondary education".

(2) The second sentence of such section is amended by striking out "teacher education programs" and inserting in lieu thereof "programs for the education of teachers and related educational personnel".

(3) (A) So much of the third sentence of such section as precedes the first comma therein is amended to read as follows: "For the purposes of this part the term 'elementary and secondary education' includes preschool and adult and vocational education, and the term 'career in elementary and secondary education or postsecondary vocational education' means a career of teaching in elementary or secondary schools (including teaching in preschool and adult and

vocational education programs) or in postsecondary vocational schools"; (B) the words "elementary or secondary schools", the second time these words occur in such third sentence, are changed to read "such schools"; and (C) the following is inserted in such sentence before the comma after "educational media": "(including educational and instructional television and radio), child development".

(c) Section 522 of such Act is amended to read as follows:

"FELLOWSHIPS AUTHORIZED

"SEC. 522. The Commissioner is authorized to award fellowships in accordance with the provisions of this part for graduate study leading to an advanced degree for persons who are pursuing or plan to pursue a career in elementary and secondary education or postsecondary vocational education."

(d) (1) Paragraph (1) of section 523 of such Act is amended by striking out "Advisory Council on Quality Teacher Preparation" and inserting in lieu thereof "National Advisory Council on Education Professions Development".

(2) Paragraph (2) of such section is amended by inserting "or postsecondary vocational schools" after "elementary or secondary schools"; inserting "or postsecondary vocational education" after "elementary or secondary education"; and amending the term "career in elementary and

secondary education", each time such term occurs, to read "career in elementary and secondary education or postsecondary vocational education".

(e) Section 524 of such Act is amended by striking out "; GRANTS" in the heading thereof, by striking out the subsection designation "(a)", and by repealing subsections (b) and (c). (For substantially equivalent provisions, see sections 531(b) and 507, respectively, of such Act as inserted therein by sections 504 and 502 of this Act.)

(f) Subsection (b) of section 525 is amended to read as follows:

"(b) Unless in the judgment of the Commissioner a program development grant under section 531 of this title adequately covers the institution's cost of education for persons awarded fellowships in a graduate program approved under section 524, the Commissioner shall (in addition to the stipends paid to persons under subsection (a)) pay to the institution of higher education at which such person is pursuing his course of study such amount as the Commissioner may determine to be appropriate, not to exceed the equivalent of $2,500 per academic year, but any amount charged such person for tuition and nonrefundable fees and deposits shall be deducted from the amount payable to the institution of higher education under this subsection."

(g) Section 528 of such Act is amended to read as follows:

"APPROPRIATIONS AUTHORIZED

"SEC. 528. There are authorized to be appropriated such sums as may be necessary to carry out the purposes of this part for each fiscal year ending prior to July 1, 1973."

NEW PARTS ADDED TO TITLE V OF HIGHER EDUCATION ACT OF 1965

SEC. 504. Title V of the Higher Education Act of 1965 is further amended by adding the following new parts at the end thereof:

"PART D—IMPROVING TRAINING OPPORTUNITIES FOR PERSONNEL SERVING IN PROGRAMS OF EDUCATION OTHER THAN HIGHER EDUCATION

"PROGRAM DEVELOPMENT GRANTS

"SEC. 531. (a) The Commissioner is authorized, in accordance with the provisions of this section, to make grants to, or contracts with, institutions of higher education to pay all or part of the cost of projects for developing or strengthening undergraduate or graduate programs (or other programs of advanced study) which the Commissioner finds will afford substantially improved training opportunities for persons who are pursuing or plan to pursue a career in ele-

mentary and secondary education or postsecondary vocational education (as defined in section 521).

"(b) Projects for developing or strengthening graduate programs may be approved by the Commissioner under this section, either individually or in conjunction with graduate programs approved for purposes of awarding fellowships under part C of this title, for such purposes as—

"(1) encouraging imaginative and innovative approaches to teacher education, including new patterns of education and new curriculums;

"(2) obtaining an appropriate geographical distribution of high-quality graduate programs which meet or, as a result of assistance received under this section, will be enabled to meet the requirements for approved fellowship programs under part C of this title;

"(3) establishing and supporting for a reasonable period of time projects for the development of new or expanded graduate programs which provide opportunities to prepare persons to serve in school systems in nonteaching professional fields; or

"(4) meeting other critical needs for advanced study in the area of educational personnel training.

"(c) Projects for developing or strengthening undergraduate programs may be approved by the Commissioner under this section for such purposes as improving the cur-

riculums designed to prepare persons for teaching and related fields, and establishing or expanding programs for the training of teacher aids and other nonprofessional educational personnel.

"PRE-SERVICE AND IN-SERVICE TRAINING

"SEC. 532. (a) The Commissioner is authorized to make grants to, or contracts with, institutions of higher education, State or local educational agencies, or other public or nonprofit agencies, institutions, or organizations, and to enter into contracts with public or private agencies, institutions, or organizations (including in either case professional or scholarly associations), for carrying out programs or projects to improve the qualifications of persons who are serving or preparing to serve in education programs in elementary and secondary schools (including preschool and adult and vocational education programs) or postsecondary vocational schools or in educational or other related agencies, or in the fields of educational or instructional television or radio, or to supervise or train persons so serving.

"(b) Programs or projects under this section may include, among others—

"(1) programs or projects to train or retrain teachers, or supervisors or trainers of teachers, in any subject generally taught in the schools, including such subjects as history, geography, economics, civics, indus-

trial schools, including such subjects as English, reading, history, geography, economics, civics, science, mathematics, industrial arts, modern foreign languages, health, physical education, international affairs, and the arts and the humanities;

"(2) programs or projects to train or retrain other educational personnel in such fields as guidance and counseling (including occupational counseling), school social work, child psychology, remedial speech and reading, child development, and educational media (including educational or instructional television or radio);

"(3) programs or projects to train teacher aids and other nonprofessional educational personnel;

"(4) programs or projects to provide training and preparation for persons participating in educational programs for children of preschool age;

"(5) programs or projects to prepare teachers and other educational personnel to meet the special needs of the socially, culturally, and economically disadvantaged;

"(6) programs or projects to train or retrain persons engaging in programs of special education for the handicapped;

"(7) programs or projects to provide inservice and other training and preparation for school administrators, school board members, State educational agency per-

sonnel, and persons responsible for or involved in planning or administering educational programs; and

"(8) programs or projects to prepare artists, craftsmen, scientists, or persons from other professions or vocations to teach or otherwise assist in programs or projects of education on a long-term, short-term, or part-time basis.

"(c) Grants or contracts under this section may provide for use of funds received thereunder to pay the cost of—

"(1) short-term or regular-session institutes or refresher courses;

"(2) seminars, symposia, workshops, or conferences; or

"(3) other preservice and inservice training programs or projects designed to improve the qualifications of persons entering or reentering the field of elementary and secondary education or postsecondary vocational education.

"(d) The Commissioner may include in the terms of any grant or contract under this section provisions authorizing the payment, to persons participating in training programs supported under this section, of such stipends (including allowances for subsistence and other expenses for such persons and their dependents) as he may determine,

which shall be consistent with prevailing practices under comparable federally supported programs.

"APPROPRIATIONS AUTHORIZED

"SEC. 533. There are authorized to be appropriated such sums as may be necessary to carry out the purposes of this part for each fiscal year ending prior to July 1, 1973.

"PART E—TRAINING AND DEVELOPMENT PROGRAMS FOR HIGHER EDUCATION PERSONNEL

"PROGRAMS AND PROJECTS

"SEC. 541. (a) The Commissioner is authorized to make grants to, or contracts with, institutions of higher education to pay all or part of the cost of projects for developing or improving programs which the Commissioner finds will substantially improve educational opportunities for persons who have, or are preparing to undertake, teaching, administrative, or other educational specialist responsibilities in institutions of higher education, or in educational or other related agencies, including—

"(1) projects to establish new, or improve existing, programs of advanced education for prospective college teachers, with emphasis upon developing the capabilities of such persons for teaching;

"(2) projects for planning changes in the curricu-

lums of advanced-degree programs in order to meet the specific needs of particular subject-matter areas for increased numbers of qualified teachers;

"(3) projects to develop or establish programs or courses designed to improve the administration of institutions of higher education; or

"(4) preservice or inservice programs, including arrangements for short-term or regular-session institutes, refresher courses, seminars, symposia, workshops, or conferences.

"(b) The Commissioner is authorized to make arrangements with institutions of higher education for providing fellowships, traineeships, or internships to persons undergoing advanced education in a program assisted under this section.

"STIPENDS

"SEC. 542. The Commissioner may include in the terms of any arrangement with an institution of higher education under this part provisions authorizing the payment, to persons participating in training programs supported under this part, of such stipends (including allowances for subsistence and other expenses for such persons and their dependents) as he may determine, which shall be consistent with prevailing practices under comparable federally supported programs.

"APPROPRIATIONS AUTHORIZED

"SEC. 543. There are authorized to be appropriated such sums as may be necessary to carry out the purposes of this part for each fiscal year ending prior to July 1, 1973."

LIMITATION

SEC. 505. The Higher Education Act of 1965 is further amended by inserting before the period at the end of section 508 (as redesignated by section 502 (b) of this Act) the following words: "or training for a religious vocation or to teach theological subjects".

SHORT TITLE OF TITLE V OF HIGHER EDUCATION ACT OF 1965

SEC. 506. Title V of the Higher Education Act of 1965, as amended by this Act, is further amended by adding at the end of part A thereof the following new section:

"SHORT TITLE

"SEC. 509. This title may be cited as the 'Education Professions Development Act'."

EFFECTIVE DATES

SEC. 507. (a) The amendments to title V of the Higher Education Act of 1965 made by the foregoing sections of this title shall be effective with respect to fiscal years beginning after June 30, 1968, except that the following amend-

ments made by this Act shall take effect on the date of enactment of this Act:

(1) The redesignation of section numbers made by section 502 of this Act.

(2) The repeal (by section 502(c) of this Act) of section 501 of title V of the Higher Education Act of 1965 (which provides for an Advisory Council on Quality Teacher Preparation) and the enactment, in lieu thereof, of section 501 (Statement of Purpose) and section 502 (National Advisory Council on Education Professions Development) of such title; and the conforming amendment to section 523(1) of such title V made by section 503(d)(1) of this Act.

(3) The enactment (by section 502(c) of this Act) of section 507 of title V of the Higher Education Act of 1965 (relating to experts and consultants), and the concomitant repeal (by section 503(e) of this Act) of subsection (c) of section 524 of such title V.

(4) The amendments made by sections 505 and 506 of this Act.

(b) Nothing in this section shall be construed to preclude advance planning and dissemination of information by

the Commissioner of Education with respect to amendments the effective date of which is deferred by this section.

TITLE VI—INSTRUCTIONAL EQUIPMENT AND MATERIALS

PART A—EQUIPMENT AND MATERIALS FOR HIGHER EDUCATION (AMENDMENTS TO HIGHER EDUCATION ACT OF 1965)

EXTENSION OF PROGRAM

SEC. 601. (a) Subsection (b) of section 601 of the Higher Education Act of 1965 is amended (1) by striking out "and" before "$60,000,000", and (2) by inserting after "June 30, 1968," the following: "and such sums as may be necessary for each of the five succeeding fiscal years,".

(b) Subsection (c) of section 601 of such Act is amended by inserting after "the succeeding fiscal year," the following: "and such sums as may be necessary for the next five fiscal years,".

(c) Section 601 of such Act is further amended by striking out subsection (d).

ELIMINATION OF SUBJECT LIMITATIONS; EXTENSION OF ASSISTANCE TO GRADUATE INSTRUCTION

SEC. 602. (a) Subsection (a) of section 601 of the Higher Education Act of 1965 is amended by striking out "in selected subject areas".

(b) (1) Clause (A) of paragraph (2) of the second sentence of section 603 is amended by striking out "other than" before "supplies consumed in use" and inserting in lieu thereof "except (i) laboratory or other special equipment for education in the natural or physical sciences at the graduate level; (ii) athletic or recreational equipment; and (iii)"; and such clause is further amended by striking out "in science, mathematics, foreign languages, history, geography, government, English, other humanities, the arts, or education at the undergraduate level".

(2) Subclause (i) of clause (B) of such paragraph (2) is amended by striking out "in such fields".

(c) The caption of title VI of such Act is amended by striking out "UNDERGRADUATE".

PART B—EQUIPMENT AND MATERIAL FOR ELEMENTARY AND SECONDARY EDUCATION (AMENDMENTS TO TITLE III OF NATIONAL DEFENSE EDUCATION ACT)

EXTENSION OF PROGRAM

SEC. 621. Section 301 of the National Defense Education Act of 1958 is amended by striking out "and" before "$110,000,000" and by inserting after "June 30, 1968," the following: "and such sums as may be necessary for the next five fiscal years,".

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ELIMINATION OF SUBJECT LIMITATIONS; AND MERGER WITH SECTION 12 OF NATIONAL FOUNDATION ON ARTS AND HUMANITIES ACT

SEC. 622. (a) (1) Paragraph (1) of subsection (a) of section 303 of the National Defense Education Act of 1958 is amended (A) by striking out "in science, mathematics, history, civics, geography, economics, industrial arts, modern foreign languages, English, or reading"; (B) by inserting before "supplies consumed in use" the following: "(i) athletic or recreational equipment, and (ii)", and (C) by striking out "and such equipment may, if there exists a critical need therefor in the judgment of local school authorities, be used when available and suitable in providing education in other subject matter,".

(2) Paragraph (5) of such subsection is amended by striking out "in the fields of science, mathematics, history, civics, geography, economics, industrial arts, modern foreign languages, English, and reading" and inserting in lieu thereof "in the subject-matter areas for which equipment and materials acquired under the State plan are used";

(3) The heading of title III of the National Defense Education Act of 1958 is amended to read: "FINANCIAL ASSISTANCE FOR STRENGTHENING INSTRUCTION IN ACADEMIC SUBJECTS".

(4) There is added at the end of title III of such Act the following new section:

"LIMITATION ON PAYMENTS UNDER THIS TITLE

"SEC. 306. No grant or loan may be made under this title for equipment or materials to be used for sectarian instruction or religious worship."

(b) Section 12 of the National Foundation on the Arts and the Humanities Act of 1965 is repealed, and sections 13 and 14 of such Act are redesignated as sections 12 and 13, respectively.

(c) The amendments made by this section shall be applicable with respect to appropriations for fiscal years ending after June 30, 1967.

PROVISION FOR WITHIN-STATE EQUALIZATION IN STATE-IMPOSED REQUIREMENTS FOR FINANCIAL PARTICIPATION OF PROJECT APPLICANTS

SEC. 623. Subsection (a) of section 303 of the National Defense Education Act of 1958 is further amended by striking out the period at the end of paragraph (5) and inserting in lieu thereof "; and"; and by inserting at the end of such subsection the following new paragraph:

"(6) sets forth any requirements imposed upon applicants for financial participation in projects assisted under this title, including any provision for taking into

account, in such requirements, the resources available to any applicant for such participation relative to the resources for participation available to all other applicants;".

PAYMENT OF STATE ADMINISTRATIVE EXPENSES OUT OF PROJECT FUNDS IN LIEU OF SEPARATE FUNDING

SEC. 624. Effective with respect to fiscal years beginning after June 30, 1968, title III of such Act is further amended as follows:

(a) Paragraph (1) of subsection (a) of section 303 (as amended by section 622 of this Act) is further amended by striking out "and" before "(B)" and by inserting the following before the semicolon at the end thereof: ", and (C) administration of the State plan, except that the amount used for administration of the State plan for any year shall not exceed an amount equal to 3 per centum of the amount paid to the State under this title for that year, or $50,000, whichever is greater".

(b) (1) Paragraph (5) of such section 303(a), the second sentence of section 301, subsection (b) of section 302, and subsection (b) of section 304 are repealed.

(2) Section 302 is amended by striking out "the first

sentence of" in subsection (a) (1); striking out "or (b)" in the first sentence of subsection (c); striking out "subsections (a) and (b)" in the same sentence of such subsection and inserting in lieu thereof "subsection (a)"; striking out "or (b)" in the second sentence of such subsection; and redesignating such subsection (c) as subsection (b), and references elsewhere to such subsection (c) are redesignated accordingly.

(3) Subsection (a) of section 304, and references thereto, are redesignated as section 304; and there is deleted from section 304 the obsolete phrase "as provided in paragraph (4) of section 302 (a) of this title".

(4) Section 304 is further amended (A) by striking out "for projects for acquisition of equipment and minor remodeling referred to in paragraph (1) of section 303 (a) which are carried out", and (B) by inserting the following after "except that": "(1) such payments with respect to expenditures for administration of the State plan shall not exceed the limitation established by paragraph (1) (C) of section 303, and (2)".

(5) Paragraph (6) of section 303 (a), as added by section 623 of this Act, is redesignated as paragraph (5).

PRIVATE SCHOOLS: AUTHORIZING LESS THAN MAXIMUM SET-ASIDE FOR LOANS; REPEALING LOAN ALLOTMENT FORMULA; AND AUTHORIZING LOANS TO AMERICAN-SPONSORED SCHOOLS SERVING AMERICAN CHILDREN ABROAD

SEC. 625. (a) Paragraph (1) of section 302(a) of the National Defense Education Act of 1958 is amended by inserting "not in excess of" before "12 per centum".

(b) (1) Section 305 of such Act of 1958 is amended (1) by striking out subsection (a) (including the section designation preceding it), (2) by striking out so much of subsection (b) (including the subsection designation) as precedes clause (1) of the second sentence and inserting in lieu thereof the following:

"SEC. 305. From the sums reserved for each fiscal year for the purposes of this section under the provisions of section 302(a), the Commissioner is authorized to make loans to private nonprofit elementary and secondary schools in any State, and to private nonprofit elementary and secondary schools outside of the United States that the Commissioner determines to be founded or sponsored by citizens of the United States and serving primarily children of American

citizens. Any such loan shall be made only for the purposes for which payments to State educational agencies are authorized under the first sentence of section 301, and—".

(2) Clause (3) of such second sentence is amended by striking out "the current average yield on all outstanding marketable obligations of the United States" and inserting in lieu thereof "the current average market yield on outstanding marketable obligations of the United States with redemption periods to maturity comparable to the average maturities of such loans".

(c) The amendments made by this section shall be effective with respect to fiscal years ending after June 30, 1967.

TITLE VII—GUIDANCE, COUNSELING, AND TESTING (AMENDMENTS TO PART A OF TITLE V OF NATIONAL DEFENSE EDUCATION ACT OF 1958)

EXTENSION OF PROGRAM

SEC. 701. (a) Section 501 of the National Defense Education Act of 1958 is amended by striking out "and" before "$30,000,000" and by inserting after "two succeeding fiscal

years," the following: "and such sums as may be necessary for the next five fiscal years,".

(b) (1) Subsection (a) of section 504 of such Act is amended by striking out "eight succeeding fiscal years" and inserting in lieu thereof "thirteen succeeding fiscal years".

(2) Subsection (b) of such section is amended by striking out "nine succeeding fiscal years" and inserting in lieu thereof "fourteen succeeding fiscal years".

TITLE VIII—LANGUAGE DEVELOPMENT (AMENDMENTS TO TITLE VI OF NATIONAL DEFENSE EDUCATION ACT OF 1958)

EXTENSION OF PROGRAM

SEC. 801. (a) Subsections (a) and (b) of section 601 of the National Defense Education Act of 1958 are each amended by striking out "1968" and inserting in lieu thereof "1969".

(b) Section 603 of such Act is amended by striking out "and" before "$18,000,000" and by inserting after "1968," the following: "and such sums as may be necessary for the next succeeding fiscal year".

TITLE IX—AMENDMENTS TO TITLE VIII (GENERAL PROVISIONS) OF HIGHER EDUCATION ACT OF 1965 AND TO TITLE X (MISCELLANEOUS PROVISIONS) OF NATIONAL DEFENSE EDUCATION ACT

ESTABLISHMENT OF ADVISORY COUNCIL ON GRADUATE EDUCATION; ABOLITION OF HIGHER EDUCATION FACILITIES ACT ADVISORY COMMITTEE

SEC. 901. (a) The Higher Education Act of 1965 is amended by adding after section 804 the following new section:

"ADVISORY COUNCIL ON GRADUATE EDUCATION

"SEC. 805. (a) There is hereby established in the Office of Education an Advisory Council on Graduate Education (hereafter in this section referred to as the 'Council'), consisting of the Commissioner, who shall be Chairman, of one representative each from the Office of Science and Technology in the Executive Office of the President, the National Science Foundation, and the National Foundation on the Arts and the Humanities, and of members appointed by the

Commissioner without regard to the civil service or classification laws. Such appointed members shall be selected from among leading authorities in the field of education.

"(b) The Council shall advise the Commissioner on matters of general policy arising in the administration by the Commissioner of programs relating to graduate education.

"(c) Members of the Council who are not in the regular full-time employ of the United States shall, while attending meetings or conferences of the Council or otherwise engaged in the business of the Council, be entitled to receive compensation at a rate fixed by the Secretary, but not exceeding $100 per diem (or, if higher, the rate specified at the time of such service for grade GS–18 in section 5332 of title 5, United States Code), including travel time, and while so serving on the business of the Council away from their homes or regular places of business, they may be allowed travel expenses, including per diem in lieu of subsistence, as authorized by section 5703 of title 5, United States Code, for persons employed intermittently in the Government service.

"(d) The Commissioner is authorized to furnish to the Council such technical assistance, and to make available to it such secretarial, clerical, and other assistance and such pertinent data available to him, as the Council may require to carry out its functions."

(b) (1) Section 203 of the Higher Education Facilities Act of 1963 is repealed.

(2) Paragraph (1) of section 202(c) of such Act is amended to read as follows:

"(1) The Commissioner shall not approve any application for a grant under this title until he has obtained the advice and recommendations of a panel of specialists who are not employees of the Federal Government and who are competent to evaluate such applications."

(c) This section shall become effective on July 1, 1968.

CONFORMING DEFINITION OF INSTITUTION OF HIGHER EDUCATION IN HIGHER EDUCATION ACT TO OTHER DEFINITIONS USED IN THE ACT AND NATIONAL DEFENSE EDUCATION ACT

SEC. 902. (a) Paragraph (a) of section 801 of the Higher Education Act of 1965 is amended by inserting after "if not so accredited," the following: "(A) is an institution with respect to which the Commissioner has determined that there is satisfactory assurance, considering the resources available to the institution, the period of time, if any, during which it has operated, the effort it is making to meet accreditation standards, and the purpose for which this determination is being made, that the institution will

meet the accreditation standards of such an agency or association within a reasonable time, or (B)".

(b) The second sentence of such paragraph (a) is amended by striking out "Such term also includes any business school or technical institution" and inserting in lieu thereof "Such term also includes any school which provides not less than a one-year program of training to prepare students for gainful employment in a recognized occupation and".

PROVISION IN NATIONAL DEFENSE EDUCATION ACT FOR THE TRUST TERRITORY OF THE PACIFIC ISLANDS, FOR SCHOOLS OF DEPARTMENT OF INTERIOR FOR INDIAN CHILDREN, AND FOR OVERSEAS DEPENDENTS SCHOOLS OF DEPARTMENT OF DEFENSE

SEC. 903. (a) Section 1008 of the National Defense Education Act of 1958 is amended to read as follows:

"SEC. 1008. The amounts reserved by the Commissioner under sections 302 and 502 shall be allotted among—

"(A) Puerto Rico, the Canal Zone, Guam, American Samoa, the Virgin Islands, and the Trust Territory of the Pacific Islands according to their respective needs for the type of assistance furnished under the part or title in which the section appears, and

"(B) (i) the Secretary of the Interior according to the need for such assistance in order to effectuate the

purposes of such part or title in schools operated for Indian children by the Department of the Interior, and (ii) the Secretary of Defense according to the need for such assistance in order to effectuate the purposes of such part or title in the overseas dependents schools of the Department of Defense. The terms upon which payments for such purpose shall be made to the Secretary of the Interior and the Secretary of Defense shall be determined pursuant to such criteria as the Commissioner determines will best carry out the purposes of this title."

(b) Sections 302 (a) (1), 302 (b), and 502 (a) are amended by striking out "2 per centum" and inserting in lieu thereof "3 per centum".

(c) The amendments made by this section shall be effective with respect to fiscal years ending after June 30, 1967.

TITLE X—AMENDMENTS TO HIGHER EDUCATION FACILITIES ACT OF 1963

ADJUSTMENT OF INTEREST RATE ON LOANS

SEC. 1001. (a) Subsection (b) of section 303 of such Act is amended to read as follows:

"(b) A loan pursuant to this title shall be secured in such manner, and shall be repaid within such period not exceeding 50 years, as may be determined by the Commissioner; and shall bear interest at a per annum rate that

is not less than (1) a rate determined by the Secretary of the Treasury taking into consideration the current average market yield on outstanding marketable obligations of the United States with redemption periods to maturity comparable to the average maturities of such loans, adjusted to the nearest one-eighth of 1 per centum, less (2) not to exceed a rate of 1 per centum per annum as determined by the Commissioner."

(b) This section shall apply to all loans approved, or for which a commitment is made, on or after the date of enactment of this Act.

EXTENDING AUTHORIZATION FOR HIGHER EDUCATION FACILITIES CONSTRUCTION ASSISTANCE IN MAJOR DISASTER AREAS

SEC. 1002. Subsection (a) of section 408 of the Higher Education Facilities Act of 1963, as added by section 7 of the Disaster Relief Act of 1966, is amended by striking out "July 1, 1967," and inserting in lieu thereof "July 1, 1972,".

HIGHER EDUCATION FACILITIES ACT OF 1963

(Public Law 88–204)

(Cordon Print of Public Law 88–204 as it would be amended if S. 1126 were to be enacted into law. Changes in existing law made by the bill are shown as follows: Existing law proposed to be omitted is enclosed in black brackets, new matter is printed in italic, existing law in which no change is proposed is shown in roman.)

AN ACT To authorize assistance to public and other nonprofit institutions of higher education in financing the construction, rehabilitation, or improvement of needed academic and related facilities in undergraduate and graduate institutions.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Higher Education Facilities Act of 1963."

* * * * * * *

TITLE II—GRANTS FOR CONSTRUCTION OF GRADUATE ACADEMIC FACILITIES

* * * * * * *

GRANTS

SEC. 202. (a) Grants under this title may be made to institutions of higher education and to cooperative graduate center boards to assist them to meet the development costs for projects for construction of academic facilities for graduate schools and cooperative graduate centers. Such grants may be made only upon application therefor at such time or times, in such manner, and containing or accompanied by such information as the Commissioner finds necessary to determine eligibility for the grants and the amounts thereof.

(b) Grants under this title for construction of academic facilities may not exceed 33⅓ per centum of the development cost of any such construction project.

(c)(1) The Commissioner shall not approve any application for a grant under this title [without the advice of the Advisory Committee established under section 203] *until he has obtained the advice and recommendations of a panel of specialists who are not employees of the Federal Government and who are competent to evaluate such applications.*

(2) In determining whether to approve applications for grants under this title, the order in which to approve such applications, and the amount of the grants, the Commissioner shall give consideration to the extent to which such projects will contribute to achieving the objectives of this title and also the extent to which they will aid in attaining a wider distribution throughout the United States of graduate schools and cooperative graduate centers.

(d) Notwithstanding the other provisions of this title the total of the payments from the appropriations for any fiscal year under this

title made with respect to projects in any State may not exceed an amount equal to 12½ per centum of such appropriation.

[ADVISORY COMMITTEE

[SEC. 203. (a) There is hereby established in the Office of Education an Advisory Committee on Graduate Education, consisting of the Commissioner, who shall be Chairman; one representative from the Office of Science and Technology in the Executive Office of the President; one from the National Science Foundation; and eight members appointed, without regard to the civil service laws, by the Commissioner with the approval of the Secretary of Health, Education, and Welfare. Such appointed members shall be selected from leading authorities in the field of education, at least three of whom shall be from the field of the humanities, with at least one of these three from a graduate school of education.

[(b) The Advisory Committee shall advise the Commissioner (1) on the action to be taken with regard to each application for a grant under this title, and (2) in the preparation of general regulations and with respect to policy matters arising in the administration of this title, including the development of criteria for approval of applications thereunder. The Advisory Committee may appoint such special advisory and technical experts and consultants as may be useful in carrying out its functions.

[(c) Members of the Advisory Committee and special advisory and technical experts and consultants appointed pursuant to subsection (b) shall, while serving on the business of the Advisory Committee, be entitled to receive compensation at rates fixed by the Secretary of Health, Education, and Welfare, but not exceeding $75 per day, including travel time; and, while so serving away from their homes or regular places of business, they may be allowed travel expenses, including per diem in lieu of subsistence, as authorized by section 5 of the Administrative Expenses Act of 1946 (5 U.S.C. 73b–2) for persons in the Government service employed intermittently.]

TITLE III—LOANS FOR CONSTRUCTION OF ACADEMIC FACILITIES

LENDING AUTHORITY

SEC. 301. The Commissioner may, in accordance with the provisions of this title, make loans to institutions of higher education or to higher education building agencies for construction of academic facilities.

LOAN LIMIT FOR ANY STATE

SEC. 302. Not more than 12½ per centum of the funds provided for in this title in the form of loans shall be used for loans to institutions of higher education or higher education building agencies within any one State.

ELIGIBILITY CONDITIONS, AMOUNTS, AND TERMS OF LOANS

SEC. 303. (a) No loan pursuant to this title shall be made unless the Commissioner finds (1) that not less than one-fourth of the develop-

ment cost of the facility will be financed from non-Federal sources, (2) that the applicant is unable to secure the amount of such loan from other sources upon terms and conditions equally as favorable as the terms and conditions applicable to loans under this title, and (3) that the construction will be undertaken in an economical manner and that it will not be of elaborate or extravagant design or materials.

(b) A loan pursuant to this title shall be secured in such manner, and shall be repaid within such period not exceeding [fifty] *50* years, as may be determined by the Commissioner; and shall bear interest at [(1) a rate determined by the Commissioner which shall not be less than a per annum rate that is one-quarter of 1 percentage point above the average annual interest rate on all interest-bearing obligations of the United States forming a part of the public debt as computed at the end of the preceding fiscal year, adjusted to the nearest one-eighth of 1 per centum, or (2) the rate of 3 per centum per annum, whichever is the lesser] *a per annum rate that is not less than (1) a rate determined by the Secretary of the Treasury taking into consideration the current average market yield on outstanding marketable obligations of the United States with redemption periods to maturity comparable to the average maturities of such loans, adjusted to the nearest one-eighth of 1 per centum, less (2) not to exceed a rate of 1 per centum per annum as determined by the Commissioner.*

(c) The Commissioner shall, during the fiscal year ending June 30, 1964, and each of the seven succeeding fiscal years, make loans to institutions of higher education for the construction of academic facilities in accordance with the provisions of this title. For the purpose of making payments into the fund established under section 305 there is hereby authorized to be appropriated the sum of $120,000,000 for the fiscal year ending June 30, 1964, and each of the two succeeding fiscal years, the sum of $200,000,000 for the fiscal year ending June 30, 1967, and the sum of $400,000,000 for the fiscal year ending June 30, 1968, and for the succeeding fiscal year; but for the fiscal year ending June 30, 1970, and the succeeding fiscal year, only such sums may be appropriated as the Congress may hereafter authorize by law. In addition to the sums authorized to be appropriated for each fiscal year for which an appropriation is authorized by the preceding sentence, there is hereby authorized to be appropriated for that fiscal year, for making such loans, the difference (if any) between any specific sums authorized to be appropriated under the preceding sentence for the preceding fiscal year and the sums which were appropriated for such preceding year under such sentence. Sums appropriated pursuant to this subsection for any fiscal year shall be available without fiscal-year limitations for loans under this title.

* * * * * * *

REVOLVING LOAN FUND

SEC. 305. (a) There is hereby created within the Treasury a separate fund for higher education academic facilities loans (hereafter in this section called "the fund") which shall be available to the Commissioner without fiscal year limitation as a revolving fund for the purposes of this title. The total of any loans made from the fund in

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any fiscal year shall not exceed limitations specified in appropriation Acts. A business-type budget for the fund shall be prepared, transmitted to the Congress, considered, and enacted in the manner prescribed by law (sections 102, 103, and 104 of the Government Corporation Control Act (31 U.S.C. 847–849) for wholly owned Government corporations.

(b) (1) The Commissioner, when authorized by an appropriation Act, may transfer to the fund available appropriations provided under section 303(c) to provide capital for the fund. All amounts received by the Commissioner as interest payments or repayments of principal on loans, and any other moneys, property, or assets derived by him from his operations in connection with this title, including any moneys derived directly or indirectly from the sale of assets, or beneficial interests or participations in assets, of the fund, shall be deposited in the fund.

(2) All loans, expenses, and payments pursuant to operations of the Commissioner under this title shall be paid from the fund, including (but not limited to) expenses and payments of the Commissioner in connection with sale, under section 302(c) of the Federal National Mortgage Association Charter Act, of participations in obligations acquired under this title. From time to time, and at least at the close of each fiscal year, the Commissioner shall pay from the fund into the Treasury as miscellaneous receipts interest on the cumulative amount of appropriations paid out for loans under this title or available as capital to the fund, less the average undisbursed cash balance in the fund during the year. The rate of such interest shall be determined by the Secretary of the Treasury, taking into consideration the average market yield during the month preceding each fiscal year on outstanding Treasury obligations of maturity comparable to the average maturity of loans made from the fund. Interest payments may be deferred with the approval of the Secretary of the Treasury, but any interest payments so deferred shall themselves bear interest. If at any time the Commissioner determines that moneys in the fund exceed the present and any reasonably prospective future requirements of the fund, such excess may be transferred to the general fund of the Treasury.

TITLE IV—GENERAL PROVISIONS

* * * * * * *

HIGHER EDUCATION FACILITIES CONSTRUCTION ASSISTANCE IN MAJOR DISASTER AREAS

SEC. 408. (a) If the Director of the Office of Emergency Planning determines that a public institution of higher education is located in whole or in part within an area which, before July 1 [1967] *1972*, has suffered a disaster which is a "major disaster" as defined in section 2(a) of the Act of September 30, 1950 (42 U.S.C. 1855a(a)), and if the Commissioner determines with respect to such public institution of higher education that—

(1) the academic facilities of the institution have been destroyed or seriously damaged as a result of the disaster;

(2) the institution is exercising due diligence in availing itself of State and other financial assistance available for the restoration or replacement of the facilities; and

(3) the institution does not have sufficient funds available to it from other sources, including the proceeds of insurance on the facilities, to provide for the restoration or replacement of the academic facilities so destroyed or seriously damaged,

the Commissioner may provide the additional assistance necessary to enable the institution to carry out construction necessary to restore or replace the facilities, upon such terms and in such amounts (subject to the provisions of this section) as the Commissioner may consider to be in the public interest; but such additional assistance, plus the amount which he determines to be available to the institution from other sources, including the proceeds of insurance on the facilities, may not exceed the cost of construction incident to the restoration or replacement of the academic facilities destroyed or seriously damaged as a result of the disaster.

(b) In addition to and apart from the assistance provided to a public institution of higher education under subsection (a), the Commissioner may provide funds to such institution in an amount which he considers necessary to replace equipment, maintenance supplies, and instructional supplies (including books, and curricular and program materials) destroyed or seriously damaged as a result of the disaster, or to lease or otherwise provide (other than by acquisition of land or construction of academic facilities) such facilities needed to replace temporarily those academic facilities which have been made unavailable as a result of the disaster, or both.

(c) In any case deemed appropriate by the Commissioner, disaster assistance provided under subsection (a) or (b) may be in the form of a repayable advance subject to such terms and conditions as he considers to be in the public interest.

(d) There are hereby authorized to be appropriated for each fiscal year such amounts as may be necessary to carry out the provisions of this section.

(e) No payment may be made to a public institution of higher education for academic facilities under subsection (a) or for assistance under subsection (b) unless an application therefore is submitted through the appropriate State Commission and is filed with the Commissioner in accordance with regulations prescribed by him. In determining the order in which such applications shall be approved, the Commissioner shall consider the relative educational and financial needs of the institutions which have submitted approvable applications. No payment may be made under subsection (a) unless the Commissioner finds, after consultation with the State commission, that the project or projects with respect to which it is made are not inconsistent with overall State plans, submitted under section 105(a), for the construction of academic facilities. All determinations made by the Commissioner under this section shall be made only after consultation with the appropriate State commission.

(f) Amounts paid by the Commissioner to a public institution of higher education under subsection (a) or (b) may be paid in advance or by way of reimbursement and in such installments as the Commissioner may determine. Any funds paid to an institution which are not expended or otherwise used for the purposes for which paid shall be repaid to the Treasury of the United States.

(g) For the purposes of this section an institution of higher education is deemed to be a "public institution of higher education" if the institution is under public supervision and control.

NATIONAL DEFENSE EDUCATION ACT OF 1958

(Public Law 85–864)

(Cordon Print of Public Law 85–864 as it would be amended if S. 1126 were to be enacted into law. Changes in existing law made by the bill are shown as follows: Existing law proposed to be omitted is enclosed in black brackets, new matter is printed in italic, existing law in which no change is proposed is shown in roman.)

AN ACT To strengthen the national defense and to encourage and assist in the expansion and improvement of educational programs to meet critical national needs; and for other purposes

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TITLE II—LOANS TO STUDENTS IN INSTITUTIONS OF HIGHER EDUCATION

APPROPRIATIONS AUTHORIZED

SEC. 201. For the purpose of enabling the Commissioner to stimulate and assist in the establishment at institutions of higher education of funds for the making of low-interest loans to students in need thereof to pursue their courses of study in such institutions, there are hereby authorized to be appropriated $47,500,000 for the fiscal year ending June 30, 1959, $75,000,000 for the fiscal year ending June 30, 1960, $82,500,000 for the fiscal year ending June 30, 1961, $90,000,000 each for the fiscal year ending June 30, 1962, and the next fiscal year, $125,000,000 for the fiscal year ending June 30, 1964, $163,300,000 for the fiscal year ending June 30, 1965, $179,300,000 for the fiscal year ending June 30, 1966, $190,000,000 for the fiscal year ending June 30, 1967, [and] $225,000,000 for the fiscal year ending June 30, 1968, *and such sums as may be necessary for each of the five succeeding fiscal years*; [and such sums for the fiscal year ending June 30, 1969], *and there are further authorized to be appropriated such sums for the fiscal year ending June 30, 1974* and each of the next three fiscal years as may be necessary to enable students who have received loans for school years ending prior to July 1, 1968, to continue or complete their education. Sums appropriated under this section [for any fiscal year] shall be available[,] (*1*) in accordance with agreements between the Commissioner and institutions of higher education, for payment of Federal capital contributions which, together with contributions from the institutions, shall be used for establishment and maintenance of student loan funds *in accordance with agreements pursuant to section 204, and* (*2*) *to the extent determined by the Commissioner not to be required for the foregoing purpose, for payments into the loan fund established by section 207*(*d*).

ALLOTMENTS TO STATES

SEC. 202. (a) From the sums appropriated pursuant to section 201 for any fiscal year ending prior to July 1, [1968] *1973*, the Commis-

sioner shall allot to each State (*for payment as Federal capital contributions or as loans to institutions under section 207*) an amount which bears the same ratio to the amount so appropriated as the number of persons enrolled on a full-time basis in institutions of higher education in such State bears to the total number of persons enrolled on a full-time basis in institutions of higher education in all of the States. The number of persons enrolled on a full-time basis in institutions of higher education for purposes of this section shall be determined by the Commissioner for the most recent year for which satisfactory data are available to him.

(*b*) *Funds available in any fiscal year for payment to institutions under this title (whether as Federal capital contributions or as loans to institutions under section 207) which are in excess of the amount appropriated pursuant to section 201 for that year shall be allotted among the States in such manner as the Commissioner determines will best carry out the purpose of this Act.*

[(b)] (*c*) Sums appropriated pursuant to section 201 for any fiscal year ending after June 30, 1968, shall be allotted among the States in such manner as the Commissioner determines to be necessary to carry out the purpose for which such amounts are appropriated.

[PAYMENT] *DISTRIBUTION AMONG INSTITUTIONS* OF FEDERAL CAPITAL CONTRIBUTIONS *AND INSTITUTIONAL LOANS*

SEC. 203. (*a*) The Commissioner shall from time to time set dates by which institutions of higher education in a State must file applications for Federal capital contributions , *and for loans pursuant to section 207*, from the allotment of such State *under section 202*(*a*). In the event the total requested in such applications[, which are made by institutions with which he has agreements under this title and] (which meet the requirements established in regulations of the Commissioner[,]) exceeds the amount of [the] *such* allotment of such State available for such purpose, the Federal capital contribution *and loans* from such allotment to each such institution shall bear the same ratio to the amount requested in its application as the amount of such allotment available for such purpose bears to the total requested in all such applications. In the event the total requested in such applications which are made by institutions in a State is less than the amount of the allotment of such State available for such purpose, the Commissioner may reallot the remaining amount from time to time, on such date or dates as the Commissioner may fix, to other States in proportion to the original allotments to such States under section 202 for such year. [The Federal capital contribution to an institution shall be paid to it from time to time in such installments as the Commissioner determines will not result in unnecessary accumulations in the student loan fund established under its agreement under this title.]

(*b*) *Sums allotted among States pursuant to section 202*(*b*) *shall be allocated among institutions within States in such manner as the Commissioner determines will best carry out the purposes of this Act.*

(*c*) *The Federal capital contribution to an institution shall be paid to it from time to time in such installments as the Commissioner determines*

will not result in unnecessary accumulations in the student loan fund established under its agreement under section 204 of this title.

* * * * * * *

TERMS OF LOAN

SEC. 205. (a) The total of the loans for any academic year or its equivalent, as determined under regulations of the Commissioner, made by institutions of higher education from loan funds established pursuant to agreements under this title may not exceed $2,500 in the case of any graduate or professional student (as defined in regulations of the Commissioner), and may not exceed $1,000 in the case of any other student. The aggregate of the loans for all years from such funds may not exceed $10,000 in the case of any graduate or professional student (as so defined, and including any loans from such funds made to such person before he became a graduate or professional student), or $5,000 in the case of any other student.[4]

(b) Loans from any such loan fund to any student by any institutions of higher education shall be made on such terms and conditions as the institution may determine; subject, however, to such conditions, limitations, and requirements as the Commissioner may prescribe (by regulation or in the agreement with the institution) with a view to preventing impairment of the capital of the student loan fund to the maximum extent practicable in the light of the objective of enabling the student to complete his course of study; and except that—

* * * * * * *

(3) not to exceed 50 per centum of any such loan (plus interest) shall be canceled for service as a full-time teacher in a public or other nonprofit elementary or secondary school in a State, in an institution of higher education, or in an elementary or secondary school overseas of the Armed Forces of the United States *or for comparable service as a full-time teacher in a program of special (including preschool) education or training designed to combat disadvantage, poverty, or unemployment which is conducted by such a school or institution or by another public or nonprofit agency, institution, or organization in a State*, at the rate of 10 per centum of the total amount of such loan plus interest thereon for each complete academic year, or its equivalent (as determined under regulations of the Commissioner) of such service [10] except that (A) such rate shall be 15 per centum for each complete academic year or its equivalent (as determined under regulations of the Commissioner) of service as a full-time teacher in a public or other nonprofit elementary or secondary school which is in the school district of a local educational agency which is eligible in such year for assistance pursuant to title II of Public Law 874, Eighty-first Congress, as amended, and which for purposes of this clause and for that year has been determined by the Commissioner, pursuant to regulations and after consultations with the State educational agency of the State in which the school is located, to be a school in which there is a high concentration of students from low-income families, except that the Commissioner shall not make such determination with respect to more than 25 per centum of the total of the public and other nonprofit elementary and secondary schools in any one State for any one year, and

(B) such rate shall be 15 per centum for each complete academic year or its equivalent (as so determined by regulations) of service as a full-time teacher of handicapped children (including mentally retarded, hard of hearing, deaf, speech impaired, visually handicapped, seriously emotionally disturbed or other health impaired children who by reason thereof require special education) in a public or other nonprofit elementary or secondary school system, and (C) for the purposes of any cancellation pursuant to clause (A) or (B).

* * * * * * *

DISTRIBUTION OF ASSETS FROM STUDENT LOAN FUNDS

SEC. 206. (a) After June 30, [1972] *1977*, and not later than September 30, [1972] *1977*, there shall be a capital distribution of the balance of the student loan fund established under [this title] *an agreement pursuant to section 204* by each institution of higher education as follows:

(1) The Commissioner shall first be paid an amount which bears the same ratio to [the] *such* balance in such fund at the close of June 30, [1972] *1977*, as the total amount of the Federal capital contributions to such fund by the Commissioner under this title bears to the sum of such Federal capital contributions and the institution's capital contributions to such fund;

(2) The remainder of such balance shall be paid to the institution.

(b) After September 30, [1972] *1977*, each institution with which the Commissioner has made an agreement under this title shall pay to the Commissioner, not less often than quarterly, the same proportionate share of amounts received by the institution after June 30, [1972] *1977*, in payment of principal or interest on student loans made from the student loan fund established pursuant to such agreement (which amount shall be determined after deduction of any costs of litigation incurred in collection of the principal or interest on loans from the fund and not already reimbursed from the student loan fund or such payments of principal or interest) as was determined for the Commissioner under subsection (a).

(c) Upon a finding by the institution or the Commissioner prior to July 1, [1972] *1977*, that the liquid assets of a student loan fund established pursuant to an agreement under this title exceed the amount required for loans or otherwise in the foreseeable future, and upon notice to such institution or to the Commissioner, as the case may be, there shall be, subject to such limitations as may be included in regulations of the Commissioner or in such agreement, a capital distribution from such fund. Such capital distribution shall be made as follows:

(1) The Commissioner shall first be paid an amount which bears the same ratio to the total to be distributed as the Federal capital contributions by the Commissioner to the student loan fund prior to such distribution bear to the sum of such Federal capital contributions and the capital contributions to the fund made by the institution;

(2) The remainder of the capital distribution shall be paid to the institution.

(d) Subsections (a) and (c) shall not apply to a separate student loan fund or account established by an institution pursuant to section 207(a)(2) of such Act with the proceeds of a loan to the institution from the national defense education loan fund, and subsection (b) shall not apply to amounts of principal or interest on student loans made from such separate student loan fund or account.

[LOANS TO INSTITUTIONS]

[SEC. 207. (a) Upon application by any institution of higher education with which he has made an agreement under this title, the Commissioner may make a loan to such institution for the purpose of helping to finance the institution's capital contributions to a student loan fund established pursuant to such agreement. Any such loan may be made only if such institution shows it is unable to secure such funds from non-Federal sources upon terms and conditions which the Commissioner determines to be reasonable and consistent with the purposes of this title. Loans made to institutions under this section shall bear interest at a rate which the Commissioner determines to be adequate to cover (1) the cost of the funds to the Treasury as determined by the Secretary of the Treasury taking into consideration the current average yields of outstanding marketable obligations of the United States having maturities comparable to the maturities of loans made by the Commissioner under this section, (2) the cost of administering this section, and (3) probable losses.

[(b) There are hereby authorized to be appropriated such sums as may be necessary to carry out the purposes of this section, but not to exceed a total of $25,000,000.

[(c) Loans made by the Commissioner under this section shall mature within such period as may be determined by the Commissioner to be appropriate in each case, but not exceeding fifteen years.]

LOANS TO INSTITUTIONS; REVOLVING FUND

Loans to Institutions

SEC. 207. (a)(1) During the period of six fiscal years beginning with the fiscal year ending June 30, 1968, the Commissioner may make loans, from the National Defense Education Loan Fund established by subsection (d), to institutions of higher education to provide all or part of the capital needed by them for making loans to students (other than capital needed to finance the institutional contribution to a student loan fund established with the aid of Federal capital contributions pursuant to an agreement under section 204). Loans to students from such borrowed sums shall be subject to the terms, conditions, and limitations set forth in section 205. The requirement in section 204(2)(B) with respect to institutional contributions to student loan funds established under that section shall not apply to loans made to institutions under this section.

(2) Loans to institutions under this section may be upon such terms and conditions, consistent with applicable provisions of section 204, as the Commissioner deems appropriate, including a requirement that the proceeds of such loan be deposited by the institution in a separate student loan fund established and maintained, in accordance with regulations, solely for operations in connection therewith (or, in accordance with such

regulations, in a segregated account so established and maintained within a student loan fund established pursuant to an agreement under section 204, in which event such account shall be treated as a separate fund for the purposes of this title). If the Commissioner deems it to be necessary to assure that the purposes of this section will be achieved, these terms and conditions may also include provisions making the institution's obligation to the Commissioner on such a loan payable solely from such revenues or other assets or security (including collections on loans to students) as the Commissioner may approve. Such a loan shall bear interest at a rate which the Commissioner determines to be adequate to cover (A) the cost of the funds to the Treasury as determined by the Secretary of the Treasury, taking into consideration the current average yields of outstanding marketable obligations of the United States having maturities comparable to the maturities of loans made by the Commissioner under this section, (B) the estimated cost of administering this section, and (C) probable losses.

PAYMENTS TO INSTITUTIONS TO COVER CERTAIN COSTS INCURRED IN MAKING STUDENT LOANS FROM BORROWED FUNDS

(b) If an institution of higher education borrows from the Commissioner from the national defense education loan fund established under subsection (d), the Commissioner shall agree to pay to the institution (1) an amount equal to 90 per centum of the loss to the institution from defaults on student loans made from the student loan fund (or account) established pursuant to paragraph (2) of subsection (a), (2) the amount by which the interest payable by the institution on the Commissioner's loan exceeds the interest received by it on student loans made from such student loan fund (or account), (3) an amount equal to so much of the expenses of the institution arising out of its operation of such student loan fund (or account) as would be allowable under paragraphs (3) (C) and (D) of section 204 if such fund (or account) were established under that section, and (4) the amount of principal which is canceled pursuant to section 205(b)(3) with respect to student loans made from such student loan fund (or account). There are authorized to be appropriated without fiscal-year limitation such sums as may be necessary to carry out the purposes of this subsection.

LIMITATION ON LOANS FROM REVOLVING FUND

(c) The total of the loans made in any fiscal year from the national defense education loan fund established by subsection (d) shall not exceed such limitations as may be specified for such year in appropriation Acts.

REVOLVING FUND

(d)(1) There is hereby created within the Treasury a national defense education loan fund (hereafter in this section called the fund) which shall be available to the Commissioner without fiscal-year limitation as a revolving fund for the purposes of this section. A business-type budget for the fund shall be prepared, transmitted to the Congress, considered and enacted in the manner prescribed by law (sections 102, 103, and 104 of the Government Corporation Control Act, 31 U.S.C. 847–849) for wholly owned Government corporations.

(2) The fund shall consist of appropriations paid into the fund pursuant to section 201, all amounts received by the Commissioner as interest payments or repayments of principal on loans, and any other moneys,

property, or assets derived by him from his operations in connection with this section (other than subsection (b)), including any moneys derived directly or indirectly from the sale of assets, or beneficial interests or participations in assets, of the fund.

(3) All loans, expenses (other than normal administrative expenses), and payments pursuant to operations of the Commissioner under this section (other than subsection (b)) shall be paid from the fund, including (but not limited to) expenses and payments of the Commissioner in connection with the sale, under section 302(c) of the Federal National Mortgage Association Charter Act, of participations in obligations acquired under this section. From time to time, and at least at the close of each fiscal year, the Commissioner shall pay from the fund into the Treasury as miscellaneous receipts interest on the cumulative amount of appropriations paid into the fund as capital for loans under this section less the average undisbursed cash balance in the fund during the year. The rate of such interest shall be determined by the Secretary of the Treasury, taking into consideration the average market yield during the month preceding each fiscal year on outstanding Treasury obligations of maturity comparable to the average maturity of loans made from the fund. Interest payments may be deferred with approval of the Secretary of the Treasury, but any interest payments so deferred shall themselves bear interest. The Commissioner shall also from time to time (not less often than annually) transfer from the fund, to the credit of the appropriation (current at the time of such transfer) for salaries and expenses of the Office of Education, an amount that in his judgment constitutes a reasonable estimate of the normal administrative expenses of the Office incurred, or to be incurred, in connection with operations of the Commissioner under this section during the period covered by the transfer. If at any time the Commissioner determines that moneys in the fund exceed the present and any reasonably prospective future requirements of the fund, such excess may be transferred to the general fund of the Treasury.

PAYMENTS TO COVER REDUCTIONS IN AMOUNTS OF LOANS

SEC. 208. In addition to the payments otherwise authorized to be made pursuant to this title, the Commissioner shall pay to the appropriate institution, at such time or times as he determines, an amount which bears the same ratio to the interest which has been prevented from accruing and the portion of the principal which has been canceled on student loans pursuant to paragraph (3) of section 205(b) (and not previously paid pursuant to this [subsection] *title*) as the total amount of the institution's capital contributions to such fund under this title bears to the sum of such institution's capital contributions and the Federal capital contributions to such fund.

* * * * * * *

TITLE III—FINANCIAL ASSISTANCE FOR STRENGTHENING INSTRUCTION IN [SCIENCE, MATHEMATICS, MODERN FOREIGN LANGUAGES, AND OTHER CRITICAL] *ACADEMIC* SUBJECTS

APPROPRIATIONS AUTHORIZED

SEC. 301. There are hereby authorized to be appropriated $70,000,000 for the fiscal year ending June 30, 1959, and for each of the five

succeeding fiscal years, $90,000,000 for the fiscal year ending June 30, 1965, $100,000,000 for the fiscal year ending June 30, 1966, and for the succeeding fiscal year [and] $110,000,000 for the fiscal year ending June 30, 1968, *and such sums as may be necessary for the next five fiscal years;* for (1) making payments to State educational agencies under this title for the acquisition of equipment and for minor remodeling, described in paragraph (1) of section 303(a), and (2) making loans authorized in section 305. [There are also authorized to be appropriated $5,000,000 for the fiscal year ending June 30, 1959, and for each of the five succeeding fiscal years, and $10,000,000 for the fiscal year ending June 30, 1965, and for each of the three succeeding fiscal years, for making payments to State educational agencies under this title to carry out the programs described in paragraph (5) of section 303(a).] [1]

ALLOTMENTS TO STATES

SEC. 302. (a)(1) From the sums appropriated pursuant to [the first sentence of] [2] section 301 for any fiscal year the Commissioner shall reserve such amount, but not in excess of [2] *3* per centum thereof as he may determine for allotment as provided in section 1008, and shall reserve *not in excess of* 12 per centum for loans authorized in section 305. From the remainder of such sums the Commissioner shall allot to each State an amount which bears the same ratio to the amount of such remainder as the product of—

(A) The school-age population of the State, and

(B) The State's allotment ratio (as determined under paragraph (2)),

bears to the sum of the corresponding products for all the States.

(2) The "allotment ratio" for any State shall be 100 per centum less the product of (A) 50 per centum and (B) the quotient obtained by dividing the income per child of school age for the State by the income per child of school age for the United States except that the allotment ratio shall in no case be less than 33⅓ per centum or more than 66⅔ per centum. The allotment ratios shall be promulgated by the Commissioner between July 1 and August 31 of each even-numbered year beginning with calendar year 1964, on the basis of the average of the incomes per child of school age for the States and for the United States for the three most recent consecutive years for which satisfactory data are available from the Department of Commerce. Each such promulgation shall be conclusive for each of the two fiscal years in the period July 1 next succeeding such promulgation except that the ratios promulgated in 1959 shall be conclusive for each of the five fiscal years in the period beginning July 1, 1960, and ending June 30, 1965.

(3) For the purpose of this title—

(A) The term "child of school age" means a member of the population between the ages of five and seventeen, both inclusive.

(B) The term "United States" means the fifty States and the District of Columbia.

(C) The term "income per child of school age" for any State or for the United States means the total personal income for the State and the United States respectively, divided by the number of children of school age in such State and in the United States, respectively.

[1] Repeal of this sentence effective July 1, 1968.
[2] Effective July 1, 1968.

[(b) From the sums appropriated pursuant to the second sentence of section 301 for any fiscal year the Commissioner shall reserve such amount, but not in excess of 2 per centum [3] thereof, as he may determine for allotment as provided in section 1008. From the remainder of such sums the Commissioner shall allot to each State an amount which bears the same ratio to the amount of such remainder as the school-age population of such State bears to the total of the school-age population of all the States. The amount allotted to any State under the preceding sentence for any fiscal year which is less than $50,000 shall be increased to $50,000, the total thereby required being derived by proportionately reducing the amount allotted to each of the remaining States under the preceding sentence, but with such adjustments as may be necessary to prevent the allotment of any of such remaining States from being thereby reduced to less than $50,000.] [4]

[(c)] (*b*) The amount of any State's allotment under subsection (a) [or (b)] of this section, or section 305(a) for any fiscal year which the Commissioner determines will not be required for such fiscal year shall be available for reallotment from time to time, on such dates during such year as the Commissioner may fix, to other States in proportion to the original allotments to such States under [subsections] *subsection* (a) [and (b)] of this section, and section 305(a), respectively, but with such proportionate amount for any of such other States being reduced to the extent it exceeds the sum the Commissioner estimates such State needs and will be able to use for such year; and the total of such reductions shall be similarly reallotted among the States whose proportionate amounts were not so reduced. Any amount reallotted to a State under this subsection during a year from funds appropriated pursuant to section 301 shall be deemed part of its allotment under subsection (a) [or (b)] of this section, or section 305(a), as the case may be, for such year. [4]

STATE PLANS

SEC. 303. (a) Any State which desires to receive payments under this title shall submit to the Commissioner, through its State educational agency, a State plan which meets the requirements of section 1004(a) and—

(1) sets forth a program under which funds paid to the State from its allotment under section 302(a) will be expended solely for projects approved by the State educational agency for (A) acquisition of laboratory and other special equipment (other than (*i*) *athletic or recreational equipment, and* (*ii*) supplies consumed in use), including audiovisual materials and equipment, and printed and published materials (other than textbooks), suitable for use in providing education [in science, mathematics, history, civics, geography, economics, industrial arts, modern foreign language, English, or reading] in public elementary or secondary schools, or both, and of testgrading equipment for such schools and specialized equipment for audiovisual libraries serving such schools, [and such equipment, may, if there exists a critical need therefor in the judgments of local school authorities, be used when available and suitable in providing education in other subject matter], [and] (B) minor remodeling of laboratory or other space used for such materials or equipment, *and* (*C*) *admin-*

[3] Pending repeal of this subsection (see note 3) this figure would be raised to 3 percent.
[4] Effective July 1, 1968.

istration of the State plan, except that the amount used for administration of the State plan for any year shall not exceed an amount equal to 3 per centum of the amount paid to the State under this title for that year, or $50,000, whichever is greater; [5]

(2) sets forth principles for determining the priority of such projects in the State for assistance under this title and provides for undertaking such projects, insofar as financial resources available therefor make possible, in the order determined by the application of such principles;

(3) provides an opportunity for a hearing before the State educational agency to any applicant for a project under this title;

(4) provides for the establishment of standards on a State level for laboratory and other special equipment acquired with assistance furnished under this title;

[(5) sets forth a program under which funds paid to the State from its allotment under section 302(b) will be expended solely for (A) expansion or improvement of supervisory or related services in public elementary and secondary schools in the fields of science, mathematics, history, civics, geography, economics, industrial arts, modern foreign languages, English, and reading in the subject-matter areas for which equipment and materials acquired under the State plan are used, and (B) administration of the State plan;] [5] and

(5) sets forth any requirements imposed upon applicants for financial participation in projects assisted under this title, including any provision for taking into account, in such requirements, the resources available to any applicant for such participation relative to the resources for participation available to all other applicants.

(b) The Commissioner shall approve any State plan and any modification thereof which complies with the provisions of subsection (a).

PAYMENT TO STATES

SEC. 304. [(a)] From a State's allotment for a fiscal year under section 302(a), the Commissioner shall, from time to time during the period such allotment is available for payment [as provided in paragraph (4) of section 302(a)], pay to such State an amount equal to one-half of the expenditures [for projects for acquisition of equipment and minor remodeling referred to in paragraph (1) of section 303(a) which are carried out] under its State plan approved under section 303(b); except that *(1) such payments with respect to expenditures for administration of the State plan shall not exceed the limitation established by paragraph (1)(C) of section 303, and* (2) no State shall receive payments under this subsection for any period in excess of its allotments for such period under section 302(a).[6]

[(b) From a State's allotment under section 302(b) for the fiscal year ending June 30, 1959, the Commissioner shall from time to time pay to such State an amount equal to the amount expended by such State for such year to carry out the program referred to in paragraph (5) of section 303(a) under its State plan approved under section 303(b). From a State's allotment under section 302(b) for the fiscal year ending June 30, 1960, and for each of the eight succeeding fiscal years, such payments shall equal one-half of the amount so expended under its State plan approved under section 303(b); except that no

[5] Insertion of clause (C) of par. (1) and repeal of par. (5) effective July 1, 1968.
[6] Amendments effective July 1, 1968.

State shall receive payments under this subsection for any fiscal year in excess of its allotment under section 302(b) for that fiscal year.][7]

LOANS TO NONPROFIT PRIVATE SCHOOLS

SEC. 305. [(a) The Commissioner shall allot, out of funds reserved for each fiscal year for the purposes of this section under the provisions of section 302(a), to each State for loans under the provisions of this section an amount which bears the same ratio to such funds as the number of persons in such State enrolled in private nonprofit elementary and secondary schools bears to the total of such numbers for all States.]

[(b) From the sums allotted to each State under the provisions of this section the Commissioner is authorized to make lonas to private nonprofit elementary and secondary schools in such State for the purposes for which payments to State educational agencies are authorized under the first sentence of section 301. Any such loan—] *From the sums reserved for each fiscal year for the purposes of this section under the provisions of section 302(a), the Commissioner is authorized to make loans to private nonprofit elementary and secondary schools in any State, and to private nonprofit elementary and secondary schools outside of the United States that the Commissioner determines to be founded or sponsored by citizens of the United States and serving primarily children of American citizens. Any such loan shall be made only for the purposes for which payments to State educational agencies are authorized under the first sentence of section 301, and—*

(1) shall be made upon application containing such information as may be deemed necessary by the Commissioner;

(2) shall be subject to such conditions as may be necessary to protect the financial interest of the United States;

(3) shall bear interest at the rate arrived at by adding one-quarter of 1 per centum per annum to the rate which the Secretary of the Treasury determines to be equal to the current average yield on [all] outstanding marketable obligations of the United States *with redemption periods to maturity comparable to the average maturities of such loans* as computed at the end of the fiscal year next preceding the date the application for the loan is approved and by adjusting the result so obtained to the nearest one-eighth of 1 per centum; and

(4) shall mature and be repayable on such date as may be agreed to by the Commissioner and the borrower, but such date shall not be more than ten years after the date on which such loan was made.

LIMITATION ON PAYMENTS UNDER THIS TITLE

SEC. 306. No grant or loan may be made under this title for equipment or materials to be used for sectarian instruction or religious worship.

TITLE IV—NATIONAL DEFENSE FELLOWSHIPS

APPROPRIATIONS AUTHORIZED

SEC. 401. There are hereby authorized to be appropriated such sums as may be necessary to carry out the provisions of this title.

[7] Repeal effective July 1, 1968.

NUMBER OF FELLOWSHIPS

SEC. 402. (a) During the fiscal year ending June 30, 1965, the Commissioner is authorized to award not to exceed three thousand fellowships to be used for study in graduate programs at institutions of higher education, during the fiscal year ending June 30, 1966, he is authorized to award not to exceed six thousand such fellowships, and during each of the [two] *seven* succeeding fiscal years, he is authorized to award not to exceed seven thousand five hundred such fellowships. Such fellowships may be awarded for such period of study as the Commissioner may determine, but not in excess of three academic years, except *(1)* that where a fellowship holder pursues his studies as a regularly enrolled student at the institution during periods outside the regular sessions of the graduate program of the institution, a fellowship may be awarded for a period not in excess of three calendar years, *and (2) that the Commissioner may provide by regulation for the granting of such fellowships for a period of study not to exceed one academic year (or one calendar year in the case of fellowships to which clause (1) applies) in addition to the maximum period otherwise applicable, under special circumstances in which the purposes of this title would most effectively be served thereby.*

(b) In addition to the number of fellowships authorized to be awarded by subsection (a) of this section, the Commissioner is authorized to award fellowships equal to the number previously awarded during any fiscal year under this section but vacated prior to the end of the period for which they were awarded; except that each fellowship awarded under this subsection shall be for such period of study, not in excess of the remainder of the period for which the fellowship which it replaces was awarded, as the Commissioner may determine.

AWARD OF FELLOWSHIPS AND APPROVAL OF INSTITUTIONS

SEC. 403. (a) Of the total number of fellowships authorized by section 402(a) to be awarded during a fiscal year (1) not less than one thousand five hundred of such fellowships awarded during the fiscal year ending June 30, 1965, and not less than one-third of such fellowships awarded during the [three] *eight* succeeding fiscal years shall be awarded to individuals accepted for study in graduate programs approved by the Commissioner under this section, and (2) the remainder shall be awarded on such bases as he may determine, subject to the provisions of subsection (c). The Commissioner shall approve a graduate program of an institution of higher education only upon application by the institution and only upon the finding—

(1) that such program is a new program or an existing program which has been expanded; and

(2) that such new program or expansion of an existing program will substantially further the objective of increasing the facilities available in the Nation for the graduate training of college or university level teachers and of promoting a wider geographical distribution of such facilities throughout the Nation[.], *and*

(3) that the application contains satisfactory assurance that the institution will make reasonable continuing efforts to encourage recipients of fellowships under this title, enrolled in such program, to teach or continue to teach in institutions of higher education.

(b) The total of the fellowships awarded as described in clause (1) of subsection (a) for pursuing a course of study in a graduate program at any institution of higher education may not exceed a limit established by the Commissioner in light of the objective referred to in subsection (a)(2), and the Commissioner shall give consideration to such objectives in determining the number of fellowships awarded under this title for attendance at any one institution of higher education.

(c) Recipients of fellowships under this title shall be persons who are interested in teaching, or continuing to teach, in institutions of higher education and are pursuing, or intend to pursue, a course of study leading to a degree of doctor of philosophy or an equivalent degree.

(d) No fellowship shall be awarded under this title for study at a school or department of divinity. For the purposes of this subsection, the term "school or department of divinity" means an institution or department or branch of an institution, whose program is specifically for the education of students to prepare them to become ministers of religion or to enter upon some other religious vocation or to prepare them to teach theological subjects.

FELLOWSHIP STIPENDS

SEC. 404. [(a) Each person awarded a fellowship under the provisions of this title shall receive a stipend of $2,000 for the first academic year of study, $2,300 for the second such year, and $2,400 for the third such year, plus an additional amount of $400 for each such year on account of each of his dependents. Where a person awarded a fellowship under this title for study at an institution of higher education pursues his studies as a regularly enrolled student at such institution during periods outside of the regular sessions of the graduate program of the institution, the Commissioner may make appropriate adjustments in his stipends and allowances for dependents.] *(a) The Commissioner shall pay to persons awarded fellowships under this title such stipends (including such allowances for subsistence and other expenses for such persons and their dependents) as he may determine to be consistent with prevailing practices under comparable federally supported programs.*

(b) In addition to the amounts paid to persons pursuant to subsection (a) there shall be paid to the institution of higher education at which each such person is pursuing his course of study $2,500 per academic year, less any amount charged such person for tuition.

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TITLE V—GUIDANCE, COUNSELING, AND TESTING; IDENTIFICATION AND ENCOURAGEMENT OF ABLE STUDENTS

PART A—STATE PROGRAMS

APPROPRIATIONS AUTHORIZED

SEC. 501. There are hereby authorized to be appropriated $15,000,000 for the fiscal year ending June 30, 1963, $17,500,000 for the fiscal year ending June 30, 1964, $24,000,000 for the fiscal year ending June

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30, 1965, $24,500,000 for the fiscal year ending June 30, 1966, [and] $30,000,000 for each of the two succeeding fiscal years *and such sums as may be necessary for the next five fiscal years*, for making grants to State educational agencies under this part to assist them to establish and maintain programs of testing and guidance and counseling.

ALLOTMENTS TO STATES

SEC. 502. (a) From the sums appropriated pursuant to section 501 for any fiscal year the Commissioner shall reserve such amount, but not in excess of [2] *3* per centum thereof, as he may determine for allotment as provided in section 1008. From the remainder of such sums the Commissioner shall allot to each State an amount which bears the same ratio to the amount of such remainder as the school-age population of such States bears to the total of the school-age population of all the States. The amount allotted to any State under the preceding sentence for any fiscal year which is less than $50,000 shall be increased to $50,000, the total of increases thereby required being derived by proportionately reducing the amount allotted to each of the remaining States under the preceding sentence, but with such adjustments as may be necessary to prevent the allotment of any such remaining States from being thereby reduced to less than $50,000.

* * * * * * *

PAYMENTS TO STATES

SEC. 504. (a) Payment under this part shall be made to those State educational agencies which administer plans approved under section 503. For the fiscal year ending June 30, 1959, such payments shall equal the amount expended by the State in carrying out its State plan, and for the fiscal year ending June 30, 1960, and for each of the [eight] *thirteen* succeeding fiscal years, such payments shall equal one-half of the amount so expended, including amounts expended under the State plan for State supervisory or related services in public elementary or secondary schools in the fields of guidance, counseling, and testing, and for administration of the State plan; except that no State educational agency shall receive payment under this part for any fiscal year in excess of that State's allotment for that fiscal year as determined under section 502.

(b) In any State which has a State plan approved under section 503 and in which the State educational agency is not authorized by law to make payments to cover the cost of testing students in any one or more elementary or secondary schools, or junior colleges or technical institutes, in such State to determine student abilities and aptitudes the Commissioner shall arrange for the testing of such students and shall pay the cost thereof for the fiscal year ending June 30, 1959, and one-half of the cost thereof for any of the [nine] *fourteen* succeeding fiscal years out of such State's allotment. Testing of students pursuant to this subsection shall, so far as practicable, be comparable to, and be done at the same grade levels and under the same conditions as in the case of, testing of students in public schools under the State plan.

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TITLE VI—LANGUAGE DEVELOPMENT

LANGUAGE AND AREA CENTERS

SEC. 601. (a) The Secretary is authorized to arrange through grants to or contracts with institutions of higher education for the establishment and operation by them, during the period beginning July 1, 1958, and ending with the close of June 30, [1968] *1969*, of centers for the teaching of any modern foreign language with respect to which the Secretary determines that individuals trained in such language are needed by the Federal Government or by business, industry, or education in the United States. Any such grant or contract may provide for instruction not only in such modern foreign language but also in other fields needed to provide a full understanding of the areas, regions, or countries in which such language is commonly used, to the extent adequate instruction in such field is not readily available, including fields such as history, political science, linguistics, economics, sociology, geography, and anthropology. Any such grant or contract may cover all or part of the cost of the establishment and operation of the center with respect to which it is made, including the cost of grants to the staff for travel in the foreign areas, regions, or countries with which the subject matter of the field or fields in which they are or will be working is concerned and the cost of travel of foreign scholars to such centers to teach or assist in teaching therein and the cost of their return, and shall be made on such conditions as the Secretary finds necessary to carry out the purposes of this section.

(b) The Secretary is also authorized, during the period beginning July 1, 1958, and ending with the close of June 30, [1968] *1969*, to pay stipends to individuals undergoing advanced training in any modern foreign language (with respect to which he makes the determination under subsection (a)), and other fields needed for a full understanding of the area, region, or country in which such language is commonly used, at any short-term or regular session of any institution of higher education, including allowances for dependents and for travel to and from their places of residence, but only upon reasonable assurance that the recipients of such stipends will, on completion of their training, be available for teaching a modern foreign language in an institution of higher education or for such other service of a public nature as may be permitted in regulations of the Secretary.

RESEARCH AND STUDIES

SEC. 602. The Commissioner is authorized, directly or by contract, to make studies and surveys to determine the need for increased or improved instruction in modern foreign languages and other fields needed to provide a full understanding of the areas, regions, or countries in which such languages are commonly used, to conduct research or more effective methods of teaching such languages and in such other fields and to develop specialized materials for use in such training, or in training teachers of such languages or in such fields.

APPROPRIATIONS AUTHORIZED

SEC. 603. There are hereby authorized to be appropriated $8,000,000 for the fiscal year ending June 30, 1964, $13,000,000 for the fiscal year ending June 30, 1965, $14,000,000 for the fiscal year ending June 30, 1966, $16,000,000 for the fiscal year ending June 30, 1967, [and] $18,000,000 for the fiscal year ending June 30, 1968 *and such sums as may be necessary for the next succeeding fiscal year*, to carry out the provisions of this title.

TITLE X—MISCELLANEOUS PROVISIONS

* * * * * * *

ALLOTMENTS TO TERRITORIES AND POSSESSIONS

SEC. 1008. The amounts reserved by the Commissioner under sections 302 and 502 shall be allotted by the Commissioner among [Puerto Rico, the Canal Zone, Guam, American Samoa, and the Virgin Islands, according to their respective needs for the type of assistance furnished under the part or title in which the section appears]—

(A) Puerto Rico, the Canal Zone, Guam, American Samoa, the Virgin Islands, and the Trust Territory of the Pacific Islands according to their respective needs for the type of assistance furnished under the part or title in which the section appears, and

(B)(i) the Secretary of the Interior according to the need for such assistance in order to effectuate the purposes of such part or title in schools operated for Indian children by the Department of the Interior, and (ii) the Secretary of Defense according to the need for such assistance in order to effectuate the purposes of such part or title in the overseas dependents schools of the Department of Defense. The terms upon which payments for such purpose shall be made to the Secretary of the Interior and the Secretary of Defense shall be determined pursuant to such criteria as the Commissioner determines will best carry out the purposes of this title.

* * * * * * *

HIGHER EDUCATION ACT OF 1965

(Public Law 89–329)

(Cordon Print of Public Law 89–329 as it would be amended if S. 1126 were to be enacted into law. Changes in existing law made by the bill are shown as follows: Existing law proposed to be omitted is enclosed in black brackets, new matter is printed in italic, existing law in which no change is proposed is shown in roman.)

AN ACT To strengthen the educational resources of our colleges and universities and to provide financial assistance for students in postsecondary and higher education

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Higher Education Act of 1965".

TITLE I—COMMUNITY SERVICE AND CONTINUING EDUCATION PROGRAMS APPROPRIATIONS AUTHORIZED

SEC. 101. For the purpose of assisting the people of the United States in the solution of community problems such as housing, poverty, government, recreation, employment, youth opportunities, transportation, health, and land use by enabling the Commissioner to make grants under this title to strengthen community service programs of colleges and universities, there are authorized to be appropriated $25,000,000 for the fiscal year ending June 30, 1966, [and] $50,000,000 for the fiscal year ending June 30, 1967, and for the succeeding fiscal year, *and such sums as may be necessary for the next five fiscal years.* [For the fiscal year ending June 30, 1969, and the succeeding fiscal year, there may be appropriated, to enable the Commissioner to make such grants, only such sums as the Congress may hereafter authorize by law.]

* * * * * * *

ALLOTMENTS TO STATES—*SET ASIDE FOR SPECIAL PROJECTS*

SEC. 103. (a)(*1*) Of the sums appropriated pursuant to section 101 for each fiscal year, *reduced by the sums reserved pursuant to paragraph (2),* the Commissioner shall allot $25,000 each to Guam, American Samoa, the Commonwealth of Puerto Rico, and the Virgin Islands and $100,000 to each of the other States, and he shall allot to each State an amount which bears the same ratio to the remainder of such sums (*as reduced by the sums reserved pursuant to paragraph (2)*), as the population of the State bears to the population of all States.

(*2*) *Not to exceed 10 per centum of the sums appropriated pursuant to section 101 shall be reserved by the Commissioner for grants and contracts pursuant to section 107.*

(b) The amount of any State's allotment under subsection (a) for any fiscal year which the Commissioner determines will not be required

for such fiscal year for carrying out the State plan (if any) approved under this title shall be available for reallotment from time to time, on such dates during such year as the Commissioner may fix, to other States in proportion to the original allotments to such States under such subsection for such year, but with such proportionate amount for any of such States being reduced to the extent it exceeds the sum the Commissioner estimates such State needs and will be able to use for such year for carrying out the State plan; and the total of such reductions shall be similarly reallotted among the States whose proportionate amounts were not so reduced. Any amount reallotted to a State under this subsection during a year from funds appropriated pursuant to section 101 shall be deemed part of its allotment under subsection (a) for such year.

(c) In accordance with regulations of the Commissioner, any State may file with him a request that a specified portion of its allotment under this title be added to the allotment of another State under this title for the purpose of meeting a portion of the Federal share of the cost of providing community service programs under this title. If it is found by the Commissioner that the programs with respect to which the request is made would meet needs of the State making the request and that use of the specified portion of such State's allotment, as requested by it, would assist in carrying out the purposes of this title, such portion of such State's allotment shall be added to the allotment of the other State under this title to be used for the purpose referred to above.

(d) The population of a State and of all the States shall be determined by the Commissioner on the basis of the most recent satisfactory data available from the Department of Commerce.

* * * * * * *

PAYMENTS

SEC. 106. (a) Except as provided in subsection (b) payment under this title shall be made to those State agencies and institutions which administer plans approved under section 105(b). Payments under this title from a State's allotment with respect to the cost of developing and carrying out its State plan shall equal 75 per centum of such costs for the fiscal year ending June 30, 1966, [75 per centum of such costs for the fiscal year ending June 30, 1967, and 50 per centum of such costs for each of the three succeeding fiscal years], *and for each of the three succeeding fiscal years, and 50 per centum of such costs for the fiscal year ending June 30, 1970, and for each of the three succeeding fiscal years*, except that no payments for any fiscal year shall be made to any State with respect to expenditures for developing and administering the State plan which exceed 5 per centum of the costs for that year for which payment under this subsection may be made to that State, or $25,000, whichever is the greater. In determining the cost of developing and carrying out a State's plan, there shall be excluded any cost with respect to which payments were received under any other Federal program.

(b) No payments shall be made to any State from its allotments for any fiscal year unless and until the Commissioner finds that the institutions of higher education which will participate in carrying out the State plan for that year will together have available during that year for expenditure from non-Federal sources for college and university extension and continuing education programs not less than the total

amount actually expended by those institutions for college and university extension and continuing education programs from such sources during the fiscal year ending June 30, 1965, plus an amount equal to not less than the non-Federal share of the costs with respect to which payment pursuant to subsection (a) is sought.

(c) Payments to a State under this title may be made in installments and in advance or by way of reimbursement with necessary adjustments on account of overpayments or underpayments, and they may be paid directly to the State or to one of more participating institutions of higher education designated for this purpose by the State, or to both.

EXPERIMENTAL PROJECTS

SEC. 107. From the sums reserved therefor pursuant to paragraph (2) of section 103 for any fiscal year, the Commissioner is authorized to make grants to or contracts with institutions of higher education to pay all or part of the cost of experimental or pilot projects in the fields of community service or continuing education, with emphasis on innovative approaches and on the promotion of comprehensiveness and coordination in these fields. The Commissioner may also, from such sums, make grants to other public or private nonprofit agencies or organizations, or contracts with public or private organizations, including grants to or contracts with professional or scholarly associations, when such grants or contracts will make an especially significant contribution to attaining the objectives of this section.

ADMINISTRATION OF STATE PLANS

SEC. [107] *108.* (a) The Commissioner shall not finally disapprove any State plan submitted under this title, or any modification thereof, without first affording the State agency or institution submitting the plan reasonable notice and apportunity for a hearing.

(b) Whenever the Commissioner, after reasonable notice and opportunity for hearing to the State agency or institution administering a State plan approved under section 105(b), finds that—

(1) The State plan has been so changed that it no longer complies with the provisions of section 105(a), or

(2) in the administration of the plan there is a failure to comply substantially with any such provision,

the Commissioner shall notify the State agency or institution that the State will not be regarded as eligible to participate in the program under this title until he is satisfied that there is no longer any such failure to comply.

JUDICIAL REVIEW

Sec. [108] *109.* (a) If any State is dissatisfied with the Commissioner's final action with respect to the approval of its State plan submitted under section 105(a) or with his final action under section 107(b), such State may, within sixty days after notice of such action, file with the United States court of appeals for the circuit in which the State is located a petition for review of that action. A copy of the petition shall be forthwith transmitted by the clerk of the court to the Commissioner, the Commissioner thereupon shall file in the court the record of the proceedings on which he based his action, as provided in section 2112 of title 28, United States Code.

(b) The findings of fact by the Commissioner, if supported by substantial evidence, shall be conclusive; but the court, for good cause

shown, may remand the case to the Commissioner to take further evidence, and the Commissioner may thereupon make new or modified findings of fact and may modify his previous action, and shall certify to the court the record of the further proceedings. Such new or modified findings of fact shall likewise be conclusive if supported by substantial evidence.

(c) The court shall have jurisdiction to affirm the action of the Commissioner or to set it aside, in whole or in part. The judgment of the court shall be subject to review by the Supreme Court of the United States upon certiorari or certification as provided in section 1254 of title 28, United States Code.

NATIONAL ADVISORY COUNCIL ON EXTENSION AND CONTINUING EDUCATION

SEC. [109] *110.* (a) The President shall, within ninety days of enactment of this title, appoint a National Advisory Council on Extension and continuing Education (hereafter referred to as the "Advisory Council"), consisting of the Commissioner, who shall be Chairman, one representative each of the Departments of Agriculture, Commerce, Defense, Labor, Interior, State, and Housing and Urban Development, and the Office of Economic Opportunity, and of such other Federal agencies having extension education responsibilities as the President may designate, and twelve members appointed, for staggered terms and without regard to the civil service laws, by the President. Such twelve members shall, to the extent possible, include persons knowledgeable in the fields of extension and continuing education, State and local officials, and other persons having special knowledge, experience, or qualification with respect to community problems, and persons representative of the general public. The Advisory Council shall meet at the call of the Chairman but not less often than twice a year.

(b) The Advisory Council shall advise the Commissioner in the preparation of general regulations and with respect to policy matters arising in the administration of this title, including policies and procedures governing the approval of State plans under section 105(b), and policies to eliminate duplication and to effectuate the coordination of programs under this title and other programs offering extension or continuing education activities and services.

(c) The Advisory Council shall review the administration and effectiveness of all federally supported extension and continuing education programs, including community service programs, make recommendations with respect thereto, and make annual reports commencing on March 31, 1967, of its findings and recommendations (including recommendations for changes in the provisions of this title and other Federal laws relating to extension and continuing education activities) to the Secretary and to the President. The President shall transmit each such report to the Congress together with his comments and recommendations.

(d) Members of the Advisory Council who are not regular full-time employees of the United States shall, while serving on the business of the Council, be entitled to receive compensation at rates fixed by the Secretary, but not exceeding $100 per day, including travel time; and, while so serving away from their homes or regular places of business, members may be allowed travel expenses, including per diem in lieu of subsistence, as authorized by section 5 of the Administrative

Expenses Act of 1946 (5 U.S.C. 73b–2) for persons in the Government service employed intermittently.

(e) The Secretary shall engage such technical assistance as may be required to carry out the functions of the Advisory Council, and the Secretary shall, in addition, make available to the Advisory Council such secretarial, clerical, and other assistance and such pertinent data prepared by the Department of Health, Education, and Welfare as it may require to carry out its functions.

(f) In carrying out its functions pursuant to this section, the Advisory Council may utilize the services and facilities of any agency of the Federal Government, in accordance with agreements between the Secretary and the head of such agency.

RELATIONSHIP TO OTHER PROGRAMS

SEC. [110] *111.* Nothing in this title shall modify authorities under the Act of February 23, 1917 (Smith-Hughes Vocational Education Act), as amended (20 U.S.C. 11–15, 16–28); the Vocational Education Act of 1946, as amended (20 U.S.C. 15i–15m, 15o–15q, 15aa–15jj, and 15aaa–15ggg); the Vocational Educational Act of 1963 (20 U.S.C. 35–35n); title VIII of the Housing Act of 1964 (Public Law 88–560); or the Act of May 8, 1914 (Smith-Lever Act) as amended (7 U.S.C. 341–348).

LIMITATION

SEC. [111] *112.* No grant may be made under this title for any educational program, activity, or service related to sectarian instruction or religious worship, or provided by a school or department of divinity. For purposes of this section, the term "school or department of divinity" means an institution or a department or branch of an institution whose program is specifically for the education of students to prepare them to become ministers of religion or to enter upon some other religious vocation, or to prepare them to teach theological subjects.

TITLE II—COLLEGE LIBRARY ASSISTANCE AND LIBRARY TRAINING AND RESEARCH

PART A—COLLEGE LIBRARY RESOURCES

APPROPRIATIONS AUTHORIZED

SEC. 201. There are authorized to be appropriated $50,000,000 [for the fiscal year ending June 30, 1966, and for each of the two succeeding fiscal years] *each for the fiscal years ending June 30, 1966, 1967, and 1968, respectively, and such sums as may be necessary for the next five fiscal years,* to enable the Commissioner to make grants under this part to institutions of higher education to assist and encourage such institutions in the acquisition for library purposes of books, periodicals, documents, magnetic tapes, phonograph records, audiovisual materials, and other related library materials (including necessary binding). [For the fiscal year ending June 30, 1969, and the succeeding fiscal year, there may be appropriated, to enable the Commissioner to make such grants, only such sums as the Congress may hereafter authorize by law.]

SPECIAL PURPOSE GRANTS

SEC. 204. (a)(1) Twenty-five per centum of the sums appropriated pursuant to section 201 for each fiscal year shall be used by the Commissioner in accordance with this subsection.

(2) Of the sums available for use under paragraph (1) sixty per centum may be used to make special grants (A) to institutions of higher education which demonstrate a special need for additional library resources and which demonstrate that such additional library resources will make a substantial contribution to the quality of their educational resources, (B) to institutions of higher education to meet special national or regional needs in the library and information sciences, and (C) to combinations of institutions of higher education which need special assistance in establishing and strengthening joint-use facilities. Grants under this section may be used only for books, periodicals, documents, magnetic tapes, phonograph records, audio-visual materials, and other related library materials (including necessary binding).

(3) Any sums available for use under paragraph (1) which are not used for the purpose of paragraph (2) shall be used in the manner prescribed by the first sentence of section 203(a).

(b) Grants pursuant to paragraph (2) shall be made upon application providing satisfactory assurance that (1) the applicant (or applicants jointly in the case of a combination of institutions) will expend during the fiscal year for which the grant is requested (from funds other than funds received under this part) for the same purpose as such grant an amount from such other sources equal to not less than 33⅓ per centum of such grant, and (2) in addition each such applicant will expend during such fiscal year (from such other sources) for all library purposes (exclusive of construction) an amount not less than the average annual amount it expended for such purposes during the two-year period ending June 30, 1965, *or during the two fiscal years preceding the fiscal year for which the grant is requested, whichever is less.*

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PART B—LIBRARY TRAINING AND RESEARCH

APPROPRIATIONS AUTHORIZED

SEC. 221. There are authorized to be appropriated $15,000,000 for the fiscal year ending June 30, 1966, and for each of the two succeeding fiscal years, *and such sums as may be necessary for each of the next five years*, for the purpose of carrying out this part. [For the fiscal year ending June 30, 1969, and the succeeding fiscal year, there may be appropriated for such purpose only such sums as the Congress may hereafter authorize by law.]

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GRANTS FOR TRAINING IN LIBRARIANSHIP

SEC. 223. (a) The Commissioner is authorized to make grants to institutions of higher education to assist them in training persons in librarianship. Such grants may be used by such institutions to assist in covering the cost of courses of training or study (*including short-term or regular session institutes*) for such persons, and for establishing and maintaining fellowships or traineeships with stipends (including

allowances for traveling, subsistence and other expenses) for fellows and other undergoing training and their dependents not in excess of such maximum amounts as may be prescribed by the Commissioner.

(b) The Commissioner may make a grant to an institution of higher education only upon application by the institution and only upon his finding that such program will substantially further the objective of increasing the opportunities throughout the Nation for training in librarianship.

RESEARCH AND DEMONSTRATIONS RELATING TO LIBRARIES AND THE TRAINING OF LIBRARY PERSONNEL, *AND GRANTS FOR LIBRARY SCHOOL PLANNING AND DEVELOPMENT*

SEC. 224. (a) The Commissioner is authorized to make grants to institutions of higher education and other public or private agencies, institutions, and organizations, (*1*) for research and demonstration projects relating to the improvement of libraries or the improvement of training in librarianship, including the development of new techniques, systems, and equipment for processing, storing, and distributing information, and for the dissemination of information derived from such research and demonstrations, and, without regard to section 3709 of the Revised Statutes (41 U.S.C. 5), to provide by contracts with them for the conduct of such activities; *and, (2) for the planning or development of programs for the opening of library or informaton science schools, or of programs intended to lead to the accreditation of such existing schools;* except that no [such] grant *under this section* may be made to a private agency, organization, or institution other than a nonprofit one.

(b) The Commissioner is authorized to appoint a special advisory committee of not more than nine members to advise him on matters of general policy concerning research and demonstration projects relating to the improvement of libraries and the improvement of training in librarianship, or concerning special services necessary thereto or special problems involved therein.

(c) Members of the committee appointed under this section who are not regular full-time employees of the United States shall, while serving on the business of the committee, be entitled to receive compensation at rates fixed by the Commissioner, but not in excess of $100 per diem, including travel time; and they may, while so serving away from their homes or regular places of business, be allowed travel expenses, including per diem in lieu of subsistence, as authorized by section 5 of the Administrative Expenses Act of 1946 (5 U.S.C. 73b–2) for persons in the Government service employed intermittently.

PART C—STRENGTHENING COLLEGE AND RESEARCH LIBRARY RESOURCES

APPROPRIATIONS AUTHORIZED

SEC. 231. There are hereby authorized to be appropriated $5,000,000 for the fiscal year ending June 30, 1966, $6,315,000 for the fiscal year ending June 30, 1967, [and] $7,770,000 for the fiscal year ending June 30, 1968, *and such sums as may be necessary for the next two fiscal*

years, to enable the Commissioner to transfer funds to the Librarian of Congress for the purpose of—

(1) acquiring, so far as possible, *copies of* all library materials currently published throughout the world which are of value to scholarship; and

(2) [providing catalog information for these materials promptly after receipt, and distributing bibliographic information] *providing catalog information promptly and distributing this and other bibliographic information about library materials* by printing catalog cards and by other means, and enabling the Library of Congress to use for exchange and other purposes such of these materials as are not needed for its own collections; and

(3) enabling the Librarian of Congress to pay administrative costs of cooperative arrangements for acquiring library materials published outside of the United States, its territories, and its possessions, and not readily obtainable outside of the country of origin, for institutions of higher education or combinations thereof for library purposes, or for other public or private nonprofit research libraries.

[For the fiscal year ending June 30, 1969, and the succeeding fiscal year, there may be appropriated, to enable the Commissioner to transfer funds to the Librarian of Congress for such purpose, only such sums as the Congress may hereafter authorize by law.]

TITLE III—STRENGTHENING DEVELOPING INSTITUTIONS

STATEMENT OF PURPOSE AND APPROPRIATIONS AUTHORIZED

SEC. 301. (a) The purpose of this title is to assist in raising the academic quality of colleges which have the desire and potential to make a substantial contribution to the higher education resources of our Nation but which for financial and other reasons are struggling for survival and are isolated from the main currents of academic life, and to do so by enabling the Commissioner to establish a national teaching fellow program and to encourage and assist in the establishment of cooperative arrangements under which these colleges may draw on the talent and experience of our finest colleges and universities, and on the educational resources of business and industry, in their effort to improve their academic quality.

(b)(1) There is authorized to be appropriated the sum of $55,000,000 for the fiscal year ending June 30, 1966, the sum of $30,000,000 for the fiscal year ending June 30, 1967, [and] the sum of $55,000,000 for the fiscal year ending June 30, 1968, *and such sums as may be necessary for the next five fiscal years*, to carry out the provisions of this title.

(2) Of the sums appropriated pursuant to this section for any fiscal year, 78 per centum shall be available only for carrying out the provisions of this title with respect to developing institutions which plan to award one or more bachelor's degrees during such year.

(3) The remainder of the sums so appropriated shall be available only for carrying out the provisions of this title with respect to developing institutions which do not plan to award such a degree during such year.

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TITLE IV—STUDENT ASSISTANCE

PART A—EDUCATIONAL OPPORTUNITY GRANTS

STATEMENT OF PURPOSE AND APPROPRIATIONS AUTHORIZED

SEC. 401. (a) It is the purpose of this part to provide, through institutions of higher education, educational opportunity grants to assist in making available the benefits of higher education to qualified high school graduates of exceptional financial need, who for lack of financial means of their own or of their families would be unable to obtain such benefits without such aid.

(b) There are hereby authorized to be appropriated $70,000,000 for the fiscal year ending June 30, 1966, and for each of the two succeeding fiscal years, *and such sums as may be necessary for the next five fiscal years*, to enable the Commissioner to make payments to institutions of higher education that have agreements with him entered into under section 407, for use by such institutions for payments to undergraduate students for the initial academic year of educational opportunity grants awarded to them under this part. [For the fiscal year ending June 30, 1969 and for the succeeding fiscal year, there may be appropriated, to carry out the first sentence of this subsection, only such sums as the Congress may hereafter authorize by law.] There are further authorized to be appropriated such sums as may be necessary for payment to such institutions for use by them for making educational opportunity grants under this part to undergraduate students for academic years other than the initial year of their educational opportunity grants; but no appropriation may be made pursuant to this sentence for any fiscal year beginning more than three years after the last fiscal year for which an appropriation is authorized under the first sentence. Sums appropriated pursuant to this subsection for any fiscal year shall be available for payment to institutions until the close of the fiscal year succeeding the fiscal year for which they were appropriated. For the purposes of this subsection, payment for the first year of an educational opportunity grant shall not be considered as an initial-year payment if the educational opportunity grant was awarded for the continuing education of a student who had been previously awarded an educational opportunity grant under this part (whether by another institution or otherwise) and had received payment for any year of that educational opportunity grant.

AMOUNT OF EDUCATIONAL OPPORTUNITY GRANT—ANNUAL DETERMINATION

SEC. 402. From the funds received by it for such purpose under this part, an institution of higher education which awards an educational opportunity grant to a student under this part shall, for the duration of the grant, pay to that student for each academic year during which he is in need of grant aid to pursue a course of study at the institution, an amount determined by the institution for such student with respect to that year, which amount shall not exceed—

(1) the lesser of $800 or one-half of the sum of the amount of student financial aid (including assistance under this title[, but excluding assistance from work-study programs]) provided such student by such institution and any assistance provided

such student under any scholarship program established by a State or a private institution or organization, as determined in accordance with regulation of the Commissioner, or

(2) in the case of a student who during the preceding academic year at an institution of higher education received grades placing him in the upper half of his class, the amount determined under paragraph (1), plus $200.

If the amount of the payment determined under the preceding sentence for an academic year is less than $200 for a student, no payment shall be made under this title to that student for that year. The Commissioner shall, subject to the foregoing limitations, prescribe for the guidance of participating institutions basic criteria or schedules (or both) for the determination of the amount of any such educational opportunity grant, taking into account the objective of limiting grant aid under this part to students of exceptional financial need and such other factors, including the number of dependents in the family, as the Commissioner may deem relevant.

* * * * * * *

ALLOTMENT OF EDUCATIONAL OPPORTUNITY GRANT FUNDS AMONG STATES

SEC. 405. (a)(1) * * *

(b) Sums appropriated pursuant to the [third] *second* sentence of section 401(b) for any fiscal year shall be allotted or reallotted among the States in such manner as the Commissioner determines to be necessary to carry out the purposes for which sums are appropriated.

ALLOCATION OF ALLOTTED FUNDS TO INSTITUTIONS

SEC. 406. (a) * * *

(b) The Commissioner shall further, in accordance with regulations, allocate to eligible institutions, in any State, from funds apportioned or reapportioned pursuant to section 405(b), funds to be used for the educational opportunity grants specified in the [third] *second* sentence of section 401(b).

(c) Payment shall be made from allocations under this section to institutions as needed.

AGREEMENTS WITH INSTITUTIONS—CONDITIONS

SEC. 407. (a) * * *

(b) (1) * * *

(2) for the purpose of making payments from amounts appropriated pursuant to the [third] *second* sentence of section 401(b), any institution electing for any fiscal year to use an amount of its payment as a Federal capital contribution pursuant to paragraph (1) shall be paid an equal amount for each of the succeeding three fiscal years from such amounts appropriated pursuant to such third sentence, if the amount so paid to the institution for each such year is used by such institution as such a Federal capital contribution.

CONTRACTS TO ENCOURAGE FULL UTILIZATION OF EDUCATIONAL TALENT

SEC. 408. (a) To assist in achieving the purposes of this part the Commissioner is authorized (without regard to section 3709 of the Revised Statutes (41 U.S.C. 5)), [to enter into contracts, not to exceed

$100,000 per year, with State and local educational agencies and other public or nonprofit organizations and institutions] *to make grants to State or local educational agencies or other public or nonprofit private agencies, institutions, or organizations, or make contracts with public or private agencies, institutions, or organizations, not to exceed (in the case of any contract or grant) $100,000 per year,* for the purpose of—

(1) identifying qualified youths of exceptional financial need and encouraging them to complete secondary school and undertake postsecondary educational training,

(2) publicizing existing forms of student financial aid, including aid furnished under this part, or

(3) encouraging secondary-school or college dropouts of demonstrated aptitude to reenter educational programs, including post-secondary-school programs.

(b) There are hereby authorized to be appropriated such sums as may be necessary to carry out this section.

* * * * * * *

PART B—FEDERAL, STATE, AND PRIVATE PROGRAMS OF LOW-INTEREST INSURED LOANS TO STUDENTS IN INSTITUTIONS OF HIGHER EDUCATION

* * * * * * *

SCOPE AND DURATION OF FEDERAL LOAN INSURANCE PROGRAM

SEC. 424. (a) The total principal amount of new loans made and installments paid pursuant to lines of credit (as defined in section 435) to students covered by Federal loan insurance under this part shall not exceed $700,000,000 in the fiscal year ending June 30, 1966, $1,000,000,000 in the fiscal year ending June 30, 1967, [and $1,400,000,000 in the fiscal year ending June 30, 1968] *and such limitation in the six succeeding fiscal years as may be specified in appropriations Acts, except that in the fiscal year ending June 30, 1968, such amount shall not exceed the lesser of any such limitation specified for that year and $1,400,000,000.* Thereafter, Federal loan insurance pursuant to this part may be granted only for loans made (or for loan installments paid pursuant to lines of credit) to enable students, who have obtained prior loans insured under this part, to continue or complete their educational program; but no insurance may be granted for any loan made or installment paid after June 30, [1972] *1977.*

(b) The Commissioner may, if he finds it necessary to do so in order to assure an equitable distribution of the benefits of this part, assign, within the maximum amounts specified in subsection (a), Federal loan insurance quotas applicable to eligible lenders, or to States or areas, and may from time to time reassign unused portions of these quotas.

LIMITATIONS ON INDIVIDUAL FEDERALLY INSURED LOANS AND ON FEDERAL LOAN INSURANCE

SEC. 425. (a) (1) The total of the loans made to a student in any academic year or its equivalent (as determined under regulations of the Commissioner) which may be covered by Federal loan insurance under this part may not exceed $1,500 [in the case of a graduate or professional student (as defined in regulations of

the Commissioner), or $1,000 in the case of any other student]. The aggregate insured unpaid principal amount of all such insured loans made to any student shall not at any time exceed $7,500 [in the case of any graduate or professional student (as defined in regulations of the Commissioner, and including any such insured loans made to such person before he became a graduate or professional student), or $5,000 in the case of any other student]. The annual insurable limit per student shall not be deemed to be exceeded by a line of credit under which actual payments by the lender to the borrower will not be made in any year in excess of the annual limit.

(2) If in any academic year or its equivalent a student receives a loan which is insured by the Commissioner under this part, no loan to that student in that year may be made or insured by the Commissioner under the National Vocational Student Loan Insurance Act of 1965; and if in any academic year or its equivalent a student receives a loan which is made or insured by the Commissioner under the National Vocational Student Loan Insurance Act of 1965, no loan to that student in that year may be insured by the Commissioner under this part.

(b) The insurance liability on any loan insured by the Commissioner under this part shall be 100 per centum of the unpaid balance of the principal amount of the loan. Such insurance liability shall not include liability for interest whether or not that interest has been added to the principal amount of the loan.

* * * * * * *

FEDERAL PAYMENTS TO REDUCE STUDENT INTEREST COSTS

Sec. 428. (a)(1) Each student who has received a loan for study at an eligible institution—

(A) which is insured by the Commissioner under this part;

(B) which was made under a State student loan program (meeting criteria prescribed by the Commissioner), and which was contracted for, and paid to the student, within the period specified by paragraph (4), or

(C) which is insured under a program of a State or of a nonprofit private institution or organization, which was contracted for, and paid to the student, within the period specified in paragraph (4), and which—

(i) in the case of a loan insured prior to July 1, 1967, was made by an eligible lender and is insured under a program which meets the requirements of subparagraph (E) of subsection (b)(1) and provides that repayment of such loan shall be in installments beginning not earlier than sixty days after the student ceases to pursue a course of study (as described in subparagraph (D) of subsection (b)(1)) at an elibible institution, or

(ii) in the case of a loan insured after June 30, 1967, is insured under a program covered by an agreement made pursuant to subsection (b),

and whose adjusted family income is less than $15,000 at the time of execution of the note or written agreement evidencing such loan, shall be entitled to have paid on his behalf and for his account to the holder of the loan, over the period of the loan, a portion of the interest on the loan. For the purposes of this paragraph, the adjusted family income of a student shall be determined pursuant to regulations of the

Commissioner in effect at the time of the execution of the note or written agreement evidencing the loan. Such regulations shall provide for taking into account such factors, including family size, as the Commissioner deems appropriate. In the absence of fraud by the lender, such determination of the adjusted family income of a student shall be final insofar as it concerns the obligation of the Commissioner to pay the holder of a loan a portion of the interest on the loan.

(2) The portion of the interest on a loan which a student is entitled to have paid on his behalf and for his account to the holder of the loan pursuant to paragraph (1) shall be equal to the total amount of the interest on the unpaid principal amount of the loan which accrues prior to the beginning of the repayment period of the loan, *or which accrues during a period in which principal need not be paid (whether or not such principal is in fact paid) by reason of a provision described in subsection (c) of this section or in subsection (a)(2)(C)* [8] *of the preceding section*, and 3 per centum per annum or the unpaid principal amount of the loan (excluding interest which has been added to principal) thereafter; but such portion of the interest on a loan shall not exceed, for any period, the amount of the interest on that loan which is payable by the student after taking into consideration the amount of any interest on that loan which the student is entitled to have paid on his behalf for that period under any State or private loan insurance program. The holder of a loan with respect to which payments are required to be made under this section shall be deemed to have a contractual right, as against the United States, to receive from the Commissioner the portion of the interest which has been so determined. The Commissioner shall pay this portion of the interest to the holder of the loan on behalf of and for the account of the borrower at such times as may be specified in regulations in force when the applicable agreement entered into pursuant to subsection (b) was made, or if the loan was made by a State or is insured under a program which is not covered by such an agreement, at such times as may be specified in regulations in force at the time the loan was paid to the student.

(3) Each holder of a loan with respect to which payments of interest are required to be made by the Commissioner shall submit to the Commissioner, at such time or times and in such manner as he may prescribe, statements containing such information as may be required by or pursuant to regulation for the purpose of enabling the Commissioner to determine the amount of the payment which he must make with respect to that loan.

(4) The period referred to in subparagraphs (B) and (C) of paragraph (1) of this subsection shall begin on the date of enactment of this Act and end at the close of June 30, 1968, except that, in the case of a loan made or insured under a student loan or loan insurance program to enable a student who has obtained a prior loan made or insured under such program to continue his educational program, such period shall end at the close of June 30, 1972.

(5) No payment may be made under this section with respect to the interest on a loan made from a student loan fund established under title II of the National Defense Education Act of 1958.

(6) In no event shall interest payments with respect to the same student loan be made under both this section and under section 9 of the National Vocational Student Loan Insurance Act of 1965.

[8] Sec. 427 (a)(2)(C), not reproduced above, provides for a moratorium on principal while a student, or during up to 3 years of service in the Armed Forces or as a Peace Corps or VISTA volunteer.

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(b)(1) Any State or any nonprofit private institution or organization may enter into an agreement with the Commissioner for the purpose of entitling students who receive loans which are insured under a student loan insurance program of that State, institution, or organization to have made on their behalf the payments provided for in subsection (a) if the Commissioner determines that the student loan insurance program—

(A) authorizes the insurance of not less than $1,000 nor more than $1,500 in loans to any individual student in any academic year or its equivalent (as determined under regulations of the Commissioner) *which limit shall not be deemed exceeded by a line of credit under which actual payments by the lender to the borrower will not be made in any such year in excess of such annual limit; and provides that the aggregate insured unpaid principal amount of all such insured loans made to any student shall not at any time exceed $7,500;*

(B) authorizes the insurance of loans to any individual student for at least six academic years of study or their equivalent (as determined under regulations of the Commissioner);

(C) provides that (i) the student borrower shall be entitled to accelerate without penalty the whole or any part of an insured loan, (ii) *except as provided in subsection (c) of this section,* the period of any insured loan may not exceed fifteen years from the date of execution of the note or other written evidence of the loan, and (iii) the note or other written evidence of any loan may contain such provisions relating to repayment in the event of default by the borrower as may be authorized by regulations of the Commissioner in effect at the time such note or written evidence was executed;

(D) subject to subparagraph (C) *of this paragraph and except as provided by subsection (c) of this section,* provides that, where the total of the insured loans to any student which are held by any one person exceeds $2,000, repayment of such loans shall be in installments over a period of not less than five years nor more than ten years beginning not earlier than nine months nor later than one year after the students ceases to pursue a full-time course of study at an eligible institution, except that if the program provides for the insurance of loans for part-time study at eligible institutions the program shall provide that such repayment period shall begin not earlier than nine months nor later than one year after the student ceases to carry at an eligible institution at least one-half the normal full-time academic workload as determined by the institution;

(E) authorizes interest on the unpaid balance of the loan at a yearly rate not inexcess of 6 per centum per annum on the unpaid principal balance of the loan (exclusive of any premium for insurance which may be passed on to the borrower);

(F) insures not less than 80 per centum of the unpaid principal of loans insured under the program;

(G) does not provide for collection of an excessive insurance premium;

(H) provides that the benefits of the loan insurance program will not be denied any student because of his family income or lack of need if his adjusted family income at the time the note or written agreement is executed is less than $15,000 (as determined pursuant to the regulations of the Commissioner prescribed under section 428(a)(1));

(I) provides that a student may obtain insurance under the program for a loan for any year of study at an eligible institution; and

(J) in the case of a State program, provides that such State program is administered by a single State agency, or by one or more nonprofit private institutions or organizations under the supervision of a single State agency[.]; *(K) provides that the total of the payments by a borrower during any year of any repayment period with respect to the aggregate amount of all loans to that borrower which are insured under the program shall not be less than $360 or the balance of all such loans (together with interest thereon), whichever amount is less.*

(2) Such an agreement shall—

(A) provide that the holder of any such loan will be required to submit to the Commissioner, at such time or times and in such manner as he may prescribe, statements containing such information as may be required by or pursuant to regulation for the purpose of enabling the Commissioner to determine the amount of the payment which he must make with respect to that loan;

(B) include such other provisions as may be necessary to protect the financial interest of the United States and promote the purposes of this part and as are agreed to by the Commissioner and the State or nonprofit private organization or institution, as the case may be; and

(C) provide for making such reports in such form and containing such information as the Commissioner may reasonably require to carry out his function under this part and for keeping such records and for affording such access thereto as the Commissioner may find necessary to assure the correctness and verification of such reports.

(c) The Commissioner shall encourage the inclusion, in any State student loan program or any State or nonprofit private student loan insurance program meeting the requirements of subsection (a)(1)(B) or (C), of provisions authorizing or requiring that in the case of student loans covered by such program periodic installments of principal need not be paid, but interest shall accrue and be paid, during any period (i) during which the borrower is pursuing a full-time course of study at an institution of higher education (or at a comparable institution outside the States approved for this purpose by the Commissioner), (ii) not in excess of three years during which the borrower is a member of the Armed Forces of the United States, (iii) not in excess of three years during which the borrower is in service as a volunteer under the Peace Corps Act, or (iv) not in excess of three years during which the borrower is in service as a volunteer under title VIII of the Economic Opportunity Act of 1964. In the case of any such State or nonprofit private program containing such a provision any such period shall be excluded in determining the period specified in clause (ii) of subparagraph (C), or the maximum period of repayment specified in subparagraph (D), of subsection (b)(1) of this section.

* * * * * * *

[ADVISORY COUNCIL ON INSURED LOANS TO STUDENTS

[SEC. 433. (a) The Secretary shall establish in the Office of Education an Advisory Council on Insured Loans to Students, consisting of the Commissioner, who shall be Chairman, and eight members appointed, without regard to the civil service laws, by the Secretary.

The membership of the Council shall include persons representing State loan insurance programs, private nonprofit loan insurance programs, financial and credit institutions, and institutions of higher education.

[(b) The Advisory Council shall advise the Commissioner with respect to policy matters arising in the administration of this part, including policies and procedures governing the making of advances under section 422 and the Federal payments to reduce student interest costs under section 428.

[(c) Members of the Advisory Council who are not regular full-time employees of the United States shall, while serving on the business of the Council, be entitled to receive compensation at rates fixed by the Secretary, but not exceeding $100 per day, including travel time; and, while so serving away from their homes or regular places of business, members may be allowed travel expenses, including per diem in lieu of subsistence, as authorized by section 5 of the Administrative Expenses Act of 1946 (5 U.S.C. 73b–2) for persons in the Government service employed intermittently.] [9]

PARTICIPATION BY FEDERAL CREDIT UNIONS IN FEDERAL, STATE, AND PRIVATE STUDENT LOAN INSURANCE PROGRAMS

SEC. [434] *433.* * * *

DEFINITIONS FOR REDUCED-INTEREST STUDENT LOAN INSURANCE PROGRAM

SEC. [435] *434.* As used in this part:

(a) The term "eligible institution" means an educational institution in any State which (1) admits as regular students only persons having a certificate of graduation from a school providing secondary education, or the recognized equivalent of such certificate, (2) is legally authorized within such State to provide a program of education beyond secondary education, (3) provides an educational program for which it awards a bachelor's degree or provides not less than a two-year program which is acceptable for full credit toward such a degree, (4) is a public or other nonprofit institution, and (5) is accredited by a nationally recognized accrediting agency or association approved by the Commissioner for this purpose or, if not so accredited, (A) is an institution with respect to which the Commissioner has determined that there is satisfactory assurance, considering the resources available to the institution, the period of time, if any, during which it has operated, the effort it is making to meet accreditation standards, and the purpose for which this determination is being made, that the institution will meet the accreditation standards of such an agency or association within a reasonable time, or (B) is an institution whose credits are accepted on transfer by not less than three institutions which are so accredited, for credit on the same basis as if transferred from an institution so accredited, for credit on the same basis as if transferred from an institution so accredited. Such term includes, *with respect to students who are nationals of the United States,* any institution outside the States which is comparable to an institution described in the preceding sentence and which has been approved by the Commissioner for the purposes of this title, and also includes any

[9] For creation of comprehensive Advisory Council on Financial Aid to Students (absorbing the councils on student loan insurance under this act and the National Vocational Student Loan Insurance Act), see the new § 481, post.

public or other nonprofit collegiate or associate degree school of nursing and any school which provides not less than a one-year program of training to prepare students for gainful employment in a recognized occupation and which meets the provisions of clauses (1), (2), (4), and (5). If the Commissioner determines that a particular category of such schools does not meet the requirements of clause (5) because there is no nationally recognized accrediting agency or association qualified to accredit schools in such category, he shall, pending the establishment of such an accrediting agency or association, appoint an advisory committee, composed of persons specially qualified to evaluate training provided by schools in such category, which shall (i) prescribe the standards of content, scope, and quality which must be met in order to qualify schools in such category to participate in the program pursuant to this part, and (ii) determine whether particular schools not meeting the requirements of clause (5) meet those standards. For purposes of this subsection, the Commissioner shall publish a list of nationally recognized accrediting agencies or associations which he determines to be reliable authority as to the quality of training offered.

* * * * * * *

[PART C [10]—COLLEGE WORK-STUDY PROGRAM EXTENSION AND AMENDMENTS

[TRANSFER OF AUTHORITY AND OTHER AMENDMENTS

[SEC. 441. Parts C and D of title I of the Economic Opportunity Act of 1964 (Public Law 88–452) are amended as follows:

(1) By striking out "Director" in the first sentence of section 122(a) and inserting in lieu thereof "Commissioner of Education (hereinafter in this part referred to as the 'Commissioner')", and by striking out "Director" wherever that word appears in the other provisions of such part C and inserting in lieu thereof "Commissioner";

(2) By amending that part of section 121 that follows the section designation to read as follows: "The purpose of this part is to stimulate and promote the part-time employment of students, particularly students from low-income families, in institutions of higher education who are in need of the earnings from such employment to pursue courses of study at such institutions.";

(3) By striking out section 123 and inserting in lieu thereof the following:

["GRANTS FOR WORK-STUDY PROGRAMS

["SEC. 123. (a) The Commissioner is authorized to enter into agreements with institutions of higher education under which the Commissioner will make grants to such institutions to assist in the operation of work-study programs as hereinafter provided.

["(b) For the purposes of this part—

["(1) The term 'institution of higher education' means an educational institution in any State which (A) admits as regular students only persons having a certificate of graduation from a school providing secondary education, or the recognized equivalent of such certifi-

[10] The bill would, as shown, delete the present provisions (except §442, to be redesignated as §448) of pt. C of title IV of the Higher Education Act of 1965 (without, however, repealing the amendments to the work-study program made by the deleted part) and would, as hereafter shown, reconstitute pt C of title I of the Economic Opportunity Act of 1964 as pt. C of title IV of the Higher Education Act of 1965, together with certain amendments thereto.

cate, (B) is legally authorized within such State to provide a program of education beyond secondary education, (C) provides an educational program for which it awards a bachelor's degree or provides not less than a two-year program which is acceptable for full credit toward such a degree, (D) is a public or other nonprofit institution, and (E) is accredited by a nationally recognized accrediting agency or association approved by the Commissioner for this purpose or, if not so accredited, (i) is an institution with respect to which the Commissioner has determined that there is satisfactory assurance, considering the resources available to the institution, the period of time, if any, during which it has operated, the effort it is making to meet accreditation standards, and the purpose for which this determination is being made, that the institution will meet the accreditation standards of such an agency or association within a reasonable time, or (ii) is an institution whose credits are accepted on transfer by not less than three institutions which are so accredited, for credit on the same basis as if transferred from an institution so accredited. Such term also includes any public or other nonprofit collegiate or associate degree school of nursing and any school which provides not less than a one-year program of training to prepare students for gainful employment in a recognized occupation and which meets the provisions of clauses (A), (B), (D), and (E). If the Commissioner determines that a particular category of such schools does not meet the requirements of clause (E) because there is no nationally recognized accrediting agency or association qualified to accredit schools in such category, he shall, pending the establishment of such an accrediting agency or association, appoint an advisory committee, composed of persons specially qualified to evaluate training provided by schools in such category, which shall (I) prescribe the standards of content, scope, and quality which must be met in order to qualify schools in such category to participate in the program pursuant to this part, and (II) determine whether particular schools not meeting the requirements of clause (E) meet those standards. For purposes of this subsection, the Commissioner shall publish a list of nationally recognized accrediting agencies or associations which he determines to be reliable authority as to the quality of training offered.

["(2) The term 'collegiate school of nursing' means a department, division, or other administrative unit in a college or university which provides primarily or exclusively an accredited program of education in professional nursing and allied subjects leading to the degree of bachelor of arts, bachelor of science, bachelor of nursing, or to an equivalent degree, or to a graduate degree in nursing.

["(3) The term 'associate degree school of nursing' means a department, division, or other administrative unit in a junior college, community college, college, or university which provides primarily or exclusively an accredited two-year program of education in professional nursing and allied subjects leading to an associate degree in nursing or to an equivalent degree.

["(4) The term 'accredited' when applied to any program of nurse education means a program accredited by a recognized body or bodies approved for such purpose by the Commissioner.";

[(4) By striking out section 124(a) and inserting in lieu thereof the following:

["(a) provide for the operation by the institution of a program for the part-time employment of its students in work for the institution itself or work in the public interest for a public or private

nonprofit organization under an arrangement between the institution and such organization, and such work—

[" (1) will not result in the displacement of employed workers or impair existing contracts for services,

[" (2) will be governed by such conditions of employment as will be appropriate and reasonable in light of such factors as type of work performed, geographical region, and proficiency of the employee, and

[" (3) does not involve the construction, operation, or maintenance of so much of any facility as is used or is to be used for sectarian instruction or as a place for religious worship;";

[(5) By redesignating clauses (2), (3), and (4), of paragraph (c) of section 124 as clauses (1), (2), and (3), and by striking out so much of such paragraph as precedes such redesignated clauses and inserting in lieu thereof the following: "(c) provide that in the selection of students for employment under such work-study program preference shall be given to students from low-income families and that employment under such work-study program shall be furnished only to a student who";

[(6) By inserting before the period at the end of section 125 a comma and the following: "and such share may be paid to such student in the form of services and equipment (including tuition, room, board, and books) furnished by such institution"; and

[(7) By striking out "provided for in" in section 131 and inserting in lieu thereof "for which he is responsible under".]

PART C—WORK-STUDY PROGRAMS [11]

STATEMENT OF PURPOSE

SEC. [121] *441*. The purpose of this part is to stimulate and promote the part-time employment of students, particularly students from low-income families, in institutions of higher education who are in need of the earnings from such employment to pursue courses of study at such institutions.

ALLOTMENTS TO STATES

SEC. [122] *442*. (a) From the sums appropriated to carry out this title for a fiscal year, the Commissioner of Education (hereinafter in this part referred to as the "Commissioner") shall reserve the amount needed for making grants under section [123] *443*. Not to exceed 2 per centum of the amount so reserved shall be allotted by the Director among Puerto Rico, Guam, American Samoa, the Trust Territory of the Pacific Islands, and the Virgin Islands according to their respective needs for assistance under this part. The remainder of the sums so reserved shall be allotted among the States as provided in subsection (b).

(b) Of the sums being allotted under this subsection—

(1) one-third shall be allotted by the Commissioner among the States so that the allotment to each State under this clause will be an amount which bears the same ratio to such one-third as the number of persons enrolled on a full-time basis [in institutions of higher education in such State bears to the total number

[11] The bill deletes pt. C (work study programs) from the Economic Opportunity Act of 1964 and reconstitutes it, with amendments here shown in italics, as pt. C of title IV of the Higher Education Act of 1965 (together with former § 442, to be redesignated as § 448, of the latter). Except for the italicized amendments, the entire pt. C, as proposed to appear in title IV, is shown in Roman. The deletion of pt. C from title I of the Economic Opportunity Act of 1964 is not shown here as such.

of persons enrolled on a full-time basis in institutions of higher education in all the States.] *in public or other nonprofit institutions of higher education in such State bears to the total number of persons enrolled on a full-time basis in such institutions in all the States,*

(2) one-third shall be allotted by the Commissioner among the States so that the allotment to each State under this clause will be an amount which bears the same ratio to such one-third as the number of high school graduates (as defined in section 103(d)(3) of the Higher Education Facilities Act of 1963) of such State bears to the total number of such high school graduates of all the States, and

(3) one-third shall be allotted by him among the States so that the allotment to each State under this clause will be an amount which bears the same ratio to such one-third as the number of related children under eighteen years of age living in families with annual incomes of less than $3,000 in such State bears to the number of related children under eighteen years of age living in families with annual incomes of less than $3,000 in all the States.

(c) The amount of any State's allotment which has not been granted to an institution of higher education under section [123] *443* at the end of the fiscal year for which appropriated shall be reallotted by the Commissioner in such manner as he determines will best assist in achieving the purposes of this Act. Amounts reallotted under this subsection shall be available for making grants under section [123] *443* until the close of the fiscal year next succeeding the fiscal year for which appropriated.

(d) For purposes of this section, the term "State" does not include Puerto Rico, Guam, American Samoa, the Trust Territory of the Pacific Islands, and the Virgin Islands.

GRANTS FOR WORK-STUDY PROGRAMS

SEC. [123] *443*. (a) The Commissioner is authorized to enter into agreements with institutions of higher education under which the Commissioner will make grants to such institutions to assist in the operation of work-study programs as hereinafter provided.

(b) For the purposes of this part—

(1) The term "institution of higher education" means an educational institution in any State which (A) admits as regular students only persons having a certificate of graduation from a school providing secondary education, or the recognized equivalent of such certificate, (B) is legally authorized within such State to provide a program of education beyond secondary education, (C) provides an educational program for which it awards a bachelor's degree or provides not less than a two-year program which is acceptable for full credit toward such a degree, [(D) is a public or other nonprofit institution,] and [(E)] (*D*) is accredited by a nationally recognized accrediting agency or association approved by the Commissioner for this purpose of, if not so accredited, (i) is an institution with respect to which the Commissioner has determined that there is satisfactory assurance, considering the resources available to the institution, the period or time, if any, during which it has operated, the effort it is making to meet accreditation standards, and the purpose for which this determination is being made, that the institution will meet the accreditation standards of such an agency or association within a reasonable time, or (ii) is an

institution whose credits are accepted on transfer by not less than three institutions which are so accredited, for credit on the same basis as if transferred from an institution so accredited. Such term also includes any public or other nonprofit collegiate or associated degree school of nursing and any school which provides not less than a one-year program of training to prepare students for gainful employment in a recognized occupation and which meets the provisions of clauses (A), (B), [(D)], and [(E)] *(D)*. If the Commissioner determines that a particular category of such schools does not meet the requirements of clause (E) because there is no nationally recognized accrediting agency or association qualified to accredit schools in such category, he shall, pending the establishment of such an accrediting agency or association, appoint an advisory committee, composed of persons specially qualified to evaluate training provided by schools in such category, which shall (I) prescribe the standards of content, scope, and quality which must be met in order to qualify schools in such category to participate in the program pursuant to this part, and (II) determine whether particular schools not meeting the requirements of clause [E] *(D)* meet those standards. For purposes of this subsection, the Commissioner shall publish a list of nationally recognized accrediting agencies or associations which he determines to be reliable authority as to the quality of training offered.

(2) The term "collegiate school of nursing" means a department, division, or other administrative unit in a college or university which provides primarily or exclusively an accredited program of education in professional nursing and allied subjects leading to the degree of bachelor of arts, bachelor of science, bachelor of nursing, or to an equivalent degree, or to a graduate degree in nursing.

(3) The term "associate degree school of nursing" means a department, division, or other administrative unit in a junior college, community college, college, or university which provides primarily or exclusively an accredited two-year program of education in professional nursing and allied subjects leading to an associate degree in nursing or to an equivalent degree.

(4) The term "accredited" when applied to any program of nurse education means a program accredited by a recognized body or bodies approved for such purpose by the Commissioner.

CONDITIONS OF AGREEMENT

SEC. [124] *444*. An agreement entered into pursuant to section [123] *443* shall—

(a) provide for the operation by the institution of a program for the part time employment of its students in work for the institution itself *but only in the case of a public or other nonprofit institution*, or work in the public interest for a public or private nonprofit organization under an arrangement between the institution and such organization, and such work—

(1) will not result in the displacement of employed workers or impair existing contracts for services,

(2) will be governed by such conditions of employment as will be appropriate and reasonable in light of such factors as type of work performed, geographical region, and proficiency of the employee, and

(3) does not involve the construction, operation, or maintenance of so much of any facility as is used or is to be used for sectarian instruction or as a place for religious worship;

(b) *except as otherwise provided under section 425*, provide that funds granted an institution of higher education, pursuant to section [123] *443* may be used only to make payments to students participating in work-study programs, except that an institution may use a portion of the sums granted to it to meet administrative expenses, but the amount so used may not exceed 5 per centum of the payments made by the Commissioner to such institution for that part of the work-study program in which students are working for public or nonprofit organizations other than the institution itself;

(c) provide that in the selection of students for employment under such work-study program preference shall be given to students from low-income families and that employment under such work-study program shall be furnished only to a student who (1) is in need of the earnings from such employment in order to pursue a course of study at such institution, (2) is capable, in the opinion of the institution, of maintaining good standing in such course of study while employed under the program covered by the agreement, and (3) has been accepted for enrollment as a full-time student at the institution or, in the case of a student already enrolled in and attending the institution, is in good standing and in full-time attendance there either as an undergraduate, graduate, or professional student;

(d) provide that no student shall be employed under such work-study program for more than fifteen hours in any week in which classes in which he is enrolled are in session[;], *except that, to the extent and in accordance with criteria established by or pursuant to regulations of the Commissioner, such maximum work week shall be forty hours with respect to classes conducted in vacation or comparable periods of additional or nonregular enrollment (as respects the particular student);*

[(e) provide that in each fiscal year ending which the agreement remains in effect, the institution shall expend (from sources other than payments under this part) for the employment of its students (whether or not in employment eligible for assistance under this part) an amount that is not less than its average annual expenditure for such employment during the three fiscal years preceding the fiscal year in which the agreement is entered into;]

(e) provide assurance that in each fiscal year during which the agreement remains in effect the institution will expend in its own programs of student assistance (including student assistance through employment of its students, whether or not in employment eligible for assistance under this part), exclusive of any component of such expenditures representing payment to the institution of Federal financial assistance as determined in accordance with regulations of the Commissioner, an amount that is not less than its average annual expenditure for such purposes during the three fiscal years preceding the fiscal year in which the agreement is entered into;

(f) provide that the Federal share of the compensation of students employed in the work-study program in accordance with the agreement will not exceed 90 per centum of such compensation for work performed during the period ending three

years after the date of enactment of this Act and [75] *80* per centum thereafter;

(g) include provisions designed to make employment under such work-study program, or equivalent employment offered or arranged for by the institution, reasonably available (to the extent of available funds) to all eligible students in the institution in need thereof; and

(h) include such other provisions as the Commissioner shall deem necessary or appropriate to carry out the purposes of this part.

USE OF WORK-STUDY FUNDS FOR ADMINISTRATIVE EXPENSES OF COOPERATIVE-EDUCATION PROGRAMS

SEC. 445. (a) An agreement entered into pursuant to section 444 may also include provisions authorizing the institution, to the extent and under terms and conditions prescribed by the Commissioner by or pursuant to regulation, to use, out of the sums granted to it under section 443, a portion for its administrative expenses (which for this purpose may, among other expenses, include expenses of counseling and guidance, placement, and consulting services) in developing or carrying out a program, described in such agreement, to demonstrate or explore the feasibility or value of methods of cooperative education involving alternative periods of full-time academic study at the institution and periods of full-time public or private employment (whether or not afforded by an organization described in section 444(a)) approved or arranged for by the institution under such program. The Commissioner may, if in his judgment it would promote efficiency and economy to do so, prescribe regulations applicable both to administrative expenses for which an institution may use work-study funds under this section and to administrative expenses for which it may use such funds under section 444(b) and to the determination of the amounts allowable for such expenses from such funds, and such regulations shall, to the extent (if any) provided therein, supersede with respect to administrative expenses referred to in section 444(b) the limitations specified therein.

(b) The question of the authority of the institution to use funds obtained under section 443 to pay for particular work performed by a student under a cooperative-education program covered under this section by an agreement with the Commissioner shall be determined solely by reference to the provisions included in the agreement pursuant to section 444.

SOURCES OF MATCHING FUNDS

SEC. [125] *446*. Nothing in this part shall be construed as restricting the source (other than this part) from which the institution may pay in share of the compensation of a student employed under a work-study program covered by an agreement under this part, and such share may be paid to such student in the form of services and equipment (including tuition, room, board, and books) furnished by such institution.

EQUITABLE DISTRIBUTION OF ASSISTANCE

SEC. [126] *447*. The Commissioner shall establish criteria designed to achieve such distribution of assistance under this part among insti-

tutions of higher education within a State as will most effectively carry out the purposes of this Act.

APPROPRIATIONS AUTHORIZED

SEC. [442] *448.* There are authorized to be appropriated $129,000,000 for the fiscal year ending June 30, 1966, $165,000,000 for the fiscal year ending June 30, 1967, [and] $200,000,000 for the fiscal year ending June 30, 1968, *and such sums as may be necessary for the next five fiscal years,* to carry out the purposes of *this* part C [of title I of the Economic Opportunity Act of 1964 (Public Law 88–452). Any sums which are appropriated for the fiscal year ending June 30, 1966, for the purpose of such part C pursuant to an authorization in the Economic Opportunity Act of 1964, or are allocated for such purpose from any appropriation for such year, shall be made available, to the extent unexpended on the date of enactment of this Act, to the Commissioner for carrying out such part C, and the total of such sums (including amounts expended prior to such date) shall be deducted from the authorization in this section for such year. Sixty million dollars of the authorization for title I of the Economic Opportunity Act of 1964 for the fiscal year ending June 30, 1966, as contained in section 131 of such Act, shall be only for the purpose of part C of such title. No provision in the Economic Opportunity Act of 1964 which authorizes the appropriation of funds to carry out that Act shall apply to such part C after June 30, 1966.] [12]

PART E—ADVISORY COUNCIL ON FINANCIAL AID TO STUDENTS

SEC. 481. (a) There is established in the Office of Education an Advisory Council on Financial Aid to Students (hereafter in this section referred to as the "Council"), consisting of the Commissioner, who shall be Chairman, and of members appointed by the Commissioner without regard to the civil service or classification laws. Such appointed members shall include leading authorities in the field of education, persons representing State and private nonprofit loan insurance programs, financial and credit institutions, and institutions of higher education and other eligible institutions as those terms may be variously defined in this Act, in the National Vocational Student Loan Insurance Act of 1965, or in the National Defense Education Act of 1958.

(b) The Council shall advise the Commissioner on matters of general policy arising in the administration by the Commissioner of programs relating to financial assistance to students and on evaluation of the effectiveness of these programs.

(c) Members of the Council who are not in the regular full-time employ of the United States shall, while attending meetings or conferences of the Council or otherwise engaged in the business of the Council, be entitled to receive compensation at a rate fixed by the Secretary, but not exceeding $100 per diem (or, if higher, the rate specified at the time of such service for grade GS–18 in section 5332 of title 5, United States Code), including traveltime, and while so serving on the business of the Council away from their homes or regular places of business they may be allowed travel expenses, including per diem in lieu of subsistence, as authorized by

[12] The deletion of the last three sentences, which have served their purpose, is declared by the bill not to affect the effect of the deleted matter and is thus pro forma, to make a clean text.

section 5703 of title 5, United States Code, for persons employed intermittently in the Government service.

(d) The Commissioner is authorized to furnish to the Council such technical assistance, and to make available to it such secretarial, clerical, and other assistance and such pertinent data available to him, as the Council may require to carry out its functions.

* * * * * * *

TITLE V—[TEACHER PROGRAMS] *EDUCATION PROFESSIONS DEVELOPMENT*

PART A—GENERAL PROVISIONS

STATEMENT OF PURPOSE

SEC. 501. The purpose of this title is to improve the quality of teaching and to help meet critical shortages of adequately trained educational personnel by (1) developing information on the actual needs for educational personnel, both present and long range, (2) providing a broad range of high quality training and retaining opportunities, responsive to changing manpower needs; (3) attracting a greater number of qualified persons into the teaching profession; (4) attracting persons who can stimulate creativity in the arts and other skills to undertake short-term or long-term assignments in education; and (5) helping to make educational personnel training programs more responsive to the needs of the schools and colleges.

[ADVISORY COUNCIL ON QUALITY TEACHER PREPARATION

[SEC. 501. (a) The Commissioner shall establish in the Office of Education an Advisory Council on Quality Teacher Preparation for the purpose of reviewing the administration and operation of the programs carried out under this title and of all other Federal programs for complementary purposes. This review shall pay particular attention to the effectiveness of these programs in attracting, preparing, and retaining highly qualified elementary and secondary school teachers, and it shall include recommendations for the improvement of these programs. The Council shall consist of the Commissioner, who shall be Chairman, and twelve members appointed for staggered terms and without regard to the civil service laws, by the Commissioner with the approval of the Secretary. Such twelve members shall include persons knowledgeable with respect to teacher preparation and the needs of urban and rural schools, and representatives of the general public.

[(b) Members of such Advisory Council who are not regular full-time employees of the United States shall, while attending meetings or conferences of such Council or otherwise engaged on business of such Council, be entitled to receive compensation at a rate fixed by the Secretary, but not exceeding $100 per diem, including travel time, and, while so serving away from their homes or regular places of business they may be allowed travel expenses, including per diem in lieu of subsistence, as authorized by section 5 of the Administrative Expenses Act of 1946 (5 U.S.C. 73b–2) for persons in the Government service employed intermittently.

[(c) The Council may appoint an Executive Secretary and such other employees as the Council deems necessary to carry out its functions under this title.]

NATIONAL ADVISORY COUNCIL ON EDUCATION PROFESSIONS DEVELOPMENT

SEC. 502. (a) There is hereby established in the Department of Health, Education, and Welfare a National Advisory Council on Education Professions Development (hereafter in this section referred to as the 'Council'), consisting of members appointed by the President without regard to the civil service and classification laws and, in addition, the Commissioner and one representative each from the National Science Foundation and the National Foundation on the Arts and the Humanities. The appointed members, one of whom shall be designated by the President as Chairman, shall include persons broadly representative of the fields of education, the arts, the sciences, and the humanities, and of the general public, and a majority of them shall be engaged in teaching or in the education of teachers.

(b) The Council shall, in addition to performing the functions set forth in subsection (c), advise the Secretary and the Commissioner with respect to policy matters arising in the administration of this title and any other matters, relating to the purposes of this title, on which their advice may be requested.

(c) The Council shall from time to time review the operation of this title and of all other Federal programs for the training and development of educational personnel and shall evaluate their effectiveness in meeting needs for additional educational personnel, and in achieving improved quality in training programs as evidenced in the competency of the persons receiving such training when entering positions in the field of education. The Council shall make annual reports of its findings and recommendations (including recommendations for changes in this title and other Federal laws relating to educational personnel training) to the Secretary for transmittal to the President, who shall transmit such reports to the Congress together with his comments and recommendations.

(d) Members of the Council who are not in the regular full-time employ of the United States shall, while serving on the business of the Council, be entitled to receive compensation at rates fixed by the Secretary, but not exceeding $100 per day (or, if higher, the rate specified at the time of such service for grade GS–18 in section 5332 of title 5, United States Code), including traveltime, and, while so serving away from their homes or regular places of business, may be allowed travel expenses, including per diem in lieu of subsistence, as authorized by section 5703 of title 5, United States Code, for persons in the Government service employed intermittently.

(e) The Secretary shall make available to the Council such technical, secretarial, clerical, and other assistance and such pertinent data prepared by the Department of Health, Education, and Welfare as it may require to carry out its functions. The Secretary may also assist the Council by utilizing for that purpose the services and facilities of any other agency of the Federal Government, in accordance with agreements (on a reimbursable basis or otherwise) between him and the head of such agency.

APPRAISING EDUCATION PERSONNEL NEEDS

SEC. 503.[13] *(a) The Commissioner shall from time to time appraise the Nation's existing and future personnel needs in the field of education, including preschool programs, elementary and secondary education,*

[13] Effective July 1, 1968.

vocational and technical education, adult education, and higher education, and the adequacy of the Nation's efforts to meet these needs. In developing information relating to educational personnel needs, the Commissioner shall consult with the Department of Labor, the National Science Foundation, the National Foundation on the Arts and the Humanities, and other appropriate public and private agencies.

(b) The Commissioner shall prepare and publish annually a report on the education professions, in which he shall present in detail his views on the state of the education professions and the trends which he discerns with respect to the future complexion of programs of education throughout the Nation and the needs for well-educated personnel to staff such programs. The report shall indicate the Commissioner's plans concerning the allocation of Federal assistance under this title in relation to the plans and programs of other Federal agencies.

ATTRACTING QUALIFIED PERSONS TO THE FIELD OF EDUCATION

SEC. 504.[13] *The Commissioner is authorized to make grants to, or contracts with, State or local educational agencies, institutions of higher education, or other public or non-profit agencies, organizations, or institutions, or to enter into contracts with public or private agencies, institutions, or organizations, for the purpose of—*

(a) identifying capable youth in secondary schools who may be interested in careers in education and encouraging them to pursue post-secondary education in preparation for such careers;

(b) publicizing available opportunities for careers in the field of education;

(c) encouraging qualified persons to enter or reenter the field of education; or

(d) encouraging artists, craftsmen, artisans, scientists, and persons from other professions and vocations, and homemakers to undertake teaching or related assignments on a part-time basis or for temporary periods.

CONSULTATION

SEC. 505.[14] *In the development and review of grant and contract programs under this title the Commissioner shall consult with the National Science Foundation and the National Foundation on the Arts and the Humanities to promote coordinated planning of programs to train educational personnel.*

TRANSFER OF FUNDS

SEC. 506.[14] *In addition to the authority for utilization of other agencies conferred by section 803(b) of this Act, funds available to the Commissioner for grants or contracts under this title shall, with the approval of the Secretary, be available for transfer to any other Federal agency for use (in accordance with an interagency agreement) by such agency (alone or in combination with funds of that agency) for purposes for which such transferred funds could be otherwise expended by the Commissioner under the provisions of this title, and the Commissioner is likewise authorized to accept and expend funds of any other Federal agency for use under this title.*

[14] Effe tive July 1, 1968.

EXPERTS AND CONSULTANTS

SEC. 507. The Commissioner may employ experts and consultants, as authorized by section 3109 of title 5, United States Code, to advise him with respect to the making of grants and contracts and the approving of programs under this title. Experts and consultants employed pursuant to this section may be compensated while so employed at rates not in excess of $100 per day (or, if higher, the rate specified at the time of such service for grade GS–18 in section 5332 of title 5, United States Code), including traveltime, and, while so serving away from their homes or regular places of business, may be allowed travel expenses, including per diem in lieu of subsistence, as authorized by section 5703 of title 5, United States Code, for persons in the Government service employed intermittently.

LIMITATION

Sec. [502] *508.* Nothing contained in this title shall be construed to authorize the making of any payments under this title for religious worship or instruction *or training for a religious vocation or to teach theological subjects.*

SHORT TITLE

Sec. 509. This title may be cited as the "Education Professions Development Act".

* * * * * * *

PART C—FELLOWSHIPS FOR TEACHERS *AND RELATED EDUCATIONAL PERSONNEL*

STATEMENT OF PURPOSE

SEC. 521. The Congress hereby declares it to be the policy of the United States to improve the quality of education offered by the [elementary and secondary] schools of the Nation by improving the quality of the education of persons who are pursuing or who plan to pursue a career in elementary and secondary education *or postsecondary vocational education.* The purpose of this part is to carry out this policy by awarding fellowships for graduate study at institutions of higher education and by developing or strengthening [teacher education] programs *for the education of teachers and related educational personnel* in institutions of higher education. For the [purpose] *purposes* of this part the term *"elementary and secondary education" includes preschool and adult and vocational education, and the term* "career in elementary and secondary education *or postsecondary vocational education"*, means a career of teaching in elementary or secondary schools *(including teaching in preschool and adult and vocational education programs) or in postsecondary vocational schools*, a career of teaching, guiding, or supervising such teachers or persons who plan to become such teachers, or a career in fields which are directly related to teaching in [elementary or secondary] *such* schools, such as library science, school social work, guidance and counseling, educational media *(including educational and instructional television and radio), child development,* and special education for handicapped children.[15]

[15] Amendments effective July 1, 1968.

FELLOWSHIPS AUTHORIZED

SEC. 522. [(a)] The Commissioner is authorized to award [not to exceed four thousand five hundred] fellowships [for the fiscal year ending June 30, 1966, ten thousand fellowships for the fiscal year ending June 30, 1967, and ten thousand fellowships for the fiscal year ending June 30, 1968. Fellowships awarded under the provisions of this part shall be] *in accordance with the provisions of this part* for graduate study leading to an advanced degree [other than a doctor of philosophy, or equivalent degree,] for persons who are pursuing or plan to pursue a career in elementary and secondary education *or postsecondary vocational education*. [Such fellowships shall be awarded as provided in sections 523 and 524 of this part and for such periods as the Commissioner may determine but not to exceed twenty-four months.]

[(b) In addition to the number of fellowships authorized to be awarded by subsection (a) of this section, the Commissioner is authorized to award fellowships equal to the number previously awarded during any fiscal year under this part but vacated prior to the end of the period for which they were awarded; except that each fellowship awarded under this subsection shall be for such period of study, not in excess of the remainder of the period for which the fellowship which it replaces was awarded, as the Commissioner may determine.][15]

ALLOCATION OF FELLOWSHIPS

SEC. 523. The Commissioner shall allocate fellowships under this part to institutions of higher education with programs approved under the provisions of section 524(a) for the use of individuals accepted into such programs, in such manner and according to such plan as will most nearly—

(1) provide an equitable distribution of such fellowships throughout the States, except that to the extent he deems proper in the national interest after consultation with the [Advisory Council on Quality Teacher Preparation] *National Advisory Council on Education Professions Development*, the Commissioner may give preference to programs designed to meet an urgent national need, and

(2) encourage experienced teachers in elementary or secondary schools *or postsecondary vocational schools* and other experienced personnel in elementary or secondary education *or postsecondary vocational education* to enter graduate programs, attract recent college graduates to pursue a career in elementary and secondary education *or postsecondary vocational education*, and afford opportunities for college graduates engaged in other occupations or activities to pursue or return to a career in elementary and secondary education *or postsecondary vocational education*.[16]

[16] Amendments to this paragraph effective July 1, 1968.

APPROVAL OF PROGRAMS[; GRANTS]

SEC. 524. [(a)] The Commissioner shall approve a graduate program of an institution of higher education only upon application by the institution and only upon his finding—

(1) that such program will substantially further the objective of improving the quality of education of persons who are pursuing or intend to pursue a career in elementary and secondary education,

(2) that such program gives emphasis to high-quality substantive courses,

(3) that such program is of high quality and either is in effect or readily attainable, and

(4) that only persons who demonstrate a serious intent to pursue or to continue a career in elementary and secondary education will be accepted for study in the program.

[(b) For the purpose of obtaining an appropriate geographical distribution of high-quality programs for the training of personnel for elementary or secondary education, the Commissioner is authorized to make grants to and contracts with institutions of higher education to pay part of the cost of developing or strengthening graduate programs which meet the requirements of subsection (a).[17]

[(c) The Commission may employ experts and consultants, as authorized by section 15 of the Administrative Expenses Act of 1946 (5 U.S.C. 55a), to advise him respect to the making of grants and contracts and the approving of programs under this section, and he shall set forth in regulations the standards and priorities which will be utilized in approving such grants and contracts. Experts and consultants employed pursuant to this subsection may be compensated while so employed at rates not in excess of $100 per diem, including travel time, and may be allowed while away from their homes or regular places of business, travel expenses (including per diem in lieu of subsistence) as authorized by section 5 of such Act (5 U.S.C. 73b–2) for persons in the Government service employed intermittently.][18]

STIPENDS

SEC. 525. (a) The Commissioner shall pay to persons awarded fellowships under this part such stipends (including such allowances for subsistence and other expenses for such persons and their dependents) as he may determine to be consistent with prevailing practices under comparable federally supported programs.

(b) [In addition to the amounts paid to persons pursuant to subsection (a)] *Unless in the judgment of the Commissioner a program development grant under section 531 of this title adequately covers the institution's cost of education for persons awarded fellowships in a graduate program approved under section 524,* the Commissioner shall *(in addition to the stipends paid to persons under subsection (a))* pay to the institution of higher education at which such person is pursuing his course of study [an] *such* amount *as the Commissioner may determine to be appropriate, not to exceed the* equivalent [to] *of* $2,500 per academic year, [less] *but* any amount charged such person for

[17] Repeal of this subsection effective July 1, 1968. Cf. new sec. 531(b), post.
[18] Cf. new sec. 507, ante.

tuition and nonrefundable fees and deposits *shall be deducted from the amount payable to the institution of higher education under this subsection.*[19]

LIMITATION

SEC. 526. No fellowships shall be awarded under this part for study at a school or department of divinity. For the purposes of this section, the term "school or department of divinity" means an institution or department or branch of an institution whose program is specifically for the education of students to prepare them to become ministers of religion or to enter upon some other religious vocation or to prepare them to teach theological subjects.

FELLOWSHIP CONDITIONS

SEC. 527. A person awarded a fellowship under the provisions of this part shall continue to receive the payments provided in section 525(a) only during such periods as the Commissioner finds that he is maintaining satisfactory proficiency and devoting full time to study or research in the field in which such fellowship was awarded in an institution of higher education, and is not engaging in gainful employment other than such part-time employment in teaching, research, or similar activities related to his training as has been approved by the Commissioner.

APPROPRIATIONS *AUTHORIZED*

SEC. 528. There are hereby authorized to be appropriated [to carry out this part $40,000,000 for the fiscal year ending June 30, 1966, $160,000,000 for the fiscal year ending June 30, 1967, $275,000,000 for the fiscal year ending June 30, 1968, and such sums for the two succeeding fiscal years as may be necessary to enable persons who have been awarded fellowships prior to July 1, 1968, to complete their study under the fellowships] *such sums as may be necessary to carry out the purposes of this part for each fiscal year ending prior to July 1, 1973.*[19]

PART D[20]*—IMPROVING TRAINING OPPORTUNITIES FOR PERSONNEL SERVING IN PROGRAMS OF EDUCATION OTHER THAN HIGHER EDUCATION*

PROGRAM DEVELOPMENT GRANTS

SEC. 531. (a) The Commissioner is authorized, in accordance with the provisions of this section, to make grants to, or contracts with, institutions of higher education to pay all or part of the cost of projects for developing or strengthening undergraduate or graduate programs (or other programs of advanced study) which the Commissioner finds will afford substantially improved training opportunities for persons who are pursuing or plan to pursue a career in elementary and secondary education or postsecondary vocational education (as defined in section 521).

(b) Projects for developing or strengthening graduate programs may be approved by the Commissioner under this section, either individually

[19] Amendments effective July 1, 1968.
[20] All of pt. D effective July 1, 1968.

or in conjunction with graduate programs approved for purposes of awarding fellowships under part C of this title, for such purposes as—

(1) encouraging imaginative and innovative approaches to teacher education, including new patterns of education and new curriculums;

(2) obtaining an appropriate geographical distribution of high-quality graduate programs which meet or, as a result of assistance received under this section, will be enabled to meet the requirements for approved fellowship programs under part C of this title;

(3) establishing and supporting for a reasonable period of time projects for the development of new or expanded graduate programs which provide opportunities to prepare persons to serve in school systems in nonteaching professional fields; or

(4) meeting other critical needs for advanced study in the area of educational personnel training.

(c) Projects for developing or strengthening undergraduate programs may be approved by the Commissioner under this section for such purposes as improving the curriculums designed to prepare persons for teaching and related fields, and establishing or expanding programs for the training of teacher aides and other nonprofessional educational personnel.

PRE-SERVICE AND IN-SERVICE TRAINING

SEC. 532. (a) The Commissioner is authorized to make grants to, or contracts with, institutions of higher education, State or local educational agencies, or other public or nonprofit agencies, institutions, or organizations, and to enter into contracts with public or private agencies, institutions, or organizations (including in either case professional or scholarly associations), for carrying out programs or projects to improve the qualifications of persons who are serving or preparing to serve in education programs in elementary and secondary schools (including preschool and adult and vocational education programs) or postsecondary vocational schools or in educational or other related agencies, or in the fields of educational or instructional television or radio, or to supervise or train persons so serving.

(b) Programs or projects under this section may include, among others—

(1) programs or projects to train or retrain teachers, or supervisors or trainers of teachers, in any subject generally taught in the schools, including such subjects as history, geography, economics, civics, industrial schools, including such subjects as English, reading, history, geography, economics, civics, science, mathematics, industrial arts, modern foreign languages, health, physical education, international affairs, and the arts and the humanities;

(2) programs or projects to train or retrain other educational personnel in such fields as guidance and counseling (including occupational counseling), school social work, child psychology, remedial speech and reading, child development, and educational media (including educational or instructional television or radio);

(3) programs or projects to train teacher aides and other nonprofessional educational personnel;

(4) programs or projects to provide training and preparation for persons participating in educational programs for children of preschool age;

(5) programs or projects to prepare teachers and other educational personnel to meet the special needs of the socially, culturally, and economically disadvantaged;

(6) programs or projects to train or retrain persons engaging in programs of special education for the handicapped;

(7) programs or projects to provide inservice and other training and preparation for school administrators, school board members, State educational agency personnel, and persons responsible for or involved in planning or administering educational programs; and

(8) programs or projects to prepare artists, craftsmen, scientists, or persons from other professions or vocations to teach or otherwise assist in programs or projects of education on a long-term, short-term, or part-time basis.

(c) Grants or contracts under this section may provide for use of funds received thereunder to pay the cost of—

(1) short-term or regular-session institutes or refresher courses;

(2) seminars, symposia, workshops, or conferences; or

(3) other preservice and inservice training programs or projects designed to improve the qualifications of persons entering or reentering the field of elementary and secondary education or postsecondary vocational education.

(d) The Commissioner may include in the terms of any grant or contract under this section provisions authorizing the payment, to persons participating in training programs supported under this section, of such stipends (including allowances for subsistence and other expenses for such persons and their dependents) as he may determine, which shall be consistent with prevailing practices under comparable federally supported programs.

APPROPRIATIONS AUTHORIZED

SEC. 533. There are authorized to be appropriated such sums as may be necessary to carry out the purposes of this part for each fiscal year ending prior to July 1, 1973.

PART E [21]—TRAINING AND DEVELOPMENT PROGRAMS FOR HIGHER EDUCATION PERSONNEL

PROGRAMS AND PROJECTS

SEC. 541. (a) The Commissioner is authorized to make grants to, or contracts with, institutions of higher education to pay all or part of the cost of projects for developing or improving programs which the Commissioner finds will substantially improve educational opportunities for persons who have, or are preparing to undertake, teaching, administrative or other educational specialist responsibilities in institutions of higher education, or in educational or other related agencies, including—

(1) projects to establish new, or improve existing, programs of advanced education for prospective college teachers, with emphasis upon developing the capabilities of such persons for teaching;

(2) projects for planning changes in the curriculums of advanced-degree programs in order to meet the specific needs of particular subject-matter areas for increased numbers of qualified teachers;

(3) projects to develop or establish programs or courses designed to improve the administration of institutions of higher education; or

(4) preservice or inservice programs, including arrangements for short-term or regular-session institutes, refresher courses, seminars, symposia, workshops, or conferences.

[21] All of pt. E effective July 1, 1968.

(b) The Commissioner is authorized to make arrangements with institutions of higher education for providing fellowships, traineeships, or internships to persons undergoing advanced education in a program assisted under this section.

STIPENDS

SEC. 542. The Commissioner may include in the terms of any arrangement with an institution of higher education under this part provisions authorizing the payment, to persons participating in training programs supported under this part, of such stipends (including allowances for subsistence and other expenses for such persons and their dependents) as he may determine, which shall be consistent with prevailing practices under comparable federally supported programs.

APPROPRIATIONS AUTHORIZED

SEC. 543. There are authorized to be appropriated such sums as may be necessary to carry out the purposes of this part for each fiscal year ending prior to July 1, 1973.

TITLE VI— FINANCIAL ASSISTANCE FOR THE IMPROVEMENT OF [UNDERGRADUATE] INSTRUCTION

PART A—EQUIPMENT

STATEMENT OF PURPOSE AND AUTHORIZATION OF APPROPRIATIONS

SEC. 601. (a) The purpose of this part is to improve the quality of classroom instruction [in selected subject areas] in institution of higher education.

(b) There are hereby authorized to be appropriated $35,000,000 for the fiscal year ending June 30, 1966, $50,000,000 for the fiscal year ending June 30, 1967, [and] $60,000,000 for the fiscal year ending June 30, 1968, *and such sums as may be necessary for each of the five succeeding fiscal years* to enable the Commissioner to make grants to institutions of higher education pursuant to this part for the acquisition of equipment and for minor remodeling described in section 603(2)(A).

(c) There are also authorized to be appropriated $2,500,000 for the fiscal year ending June 30, 1966, and $10,000,000 for the fiscal year ending June 30, 1967, and for the succeeding fiscal year, *and such sums as may be necessary for the next five fiscal years,* to enable the Commissioner to make grants to institutions of higher education pursuant to this part for the acquisition of television equipment and for minor remodeling described in section 603(2)(B).

[(d) For the fiscal year ending June 30, 1969, and for the succeeding fiscal year, there may be appropriated for the purposes set forth in subsections (b) and (c) of this section, only such sums as the Congress may hereafter authorize by law.]

* * * * * * *

STATE COMMISSIONS AND PLANS

SEC. 603. Any State desiring to participate in the program under this part shall designate for that purpose an existing State agency which is broadly representative of the public and of institutions of

higher education in the State, or, if no such State agency exists, shall establish such a State agency, and submit to the Commissioner through the agency so designated or established (hereafter in this part referred to as the "State commission"), a State plan for such participation. The Commissioner shall approve any such plan which—

(1) provides that it shall be administered by the State commission;

(2) sets forth, consistently with basic criteria prescribed by regulation purusant to section 604, objective standards and methods (A) for determining the relative priorities of eligible projects for the acquisition of laboratory and other special equipment ([other than]*except (i) laboratory or other special equipment for education in the natural or physical sciences at the graduate level; (ii) athletic or recreational equipment; and* (iii) supplies consumed in use), including audio-visual materials and equipment for classrooms or audio-visual centers, and printed and published materials (other than textbooks) for classrooms or libraries suitable for use in providing education [in sicence, mathematics, foreign languages, history, geography, government, English, other humanities, the arts, or education at the undergraduate level] in institutions of higher education, and minor remodeling of classroom or other space used for such materials or equipment; (B) for determining relative priorities of eligible projects for (i) the acquisition of television equipment for closed-circuit direct instruction [in such fields] in such institutions (including equipment for fixed-service instructional television, as defined by the Federal Communications Commission, but not including broadcast transmission equipment), (ii) the acquisition of necessary instructional materials for use in such television instruction, and (iii) minor remodeling necessary for such television equipment; and (C) for determining the Federal share of the cost of each such project;

(3) provides (A) for assigning priorities solely on the basis of such critieria, standards, and methods to eligible projects submitted to the State commission and deemed by it to be otherwise approvable under the provisions of this part; and (B) for approving and recommending to the Commissioner, in the order of such priority, applications covering such eligible projects and for certifying to the Commissioner the Federal share, determined by the State commission under the State plan, of the cost of the project involved;

(4) provides for affording to every applicant, which has submitted to the Station commission a project, an opportunity for a fair hearing before the commission as to the priority assigned to such project or as to any other determination of the commission adversely affecting such applicant; and

(5) provides (A) for such fiscal control and fund accounting procedures as may be necessary to assure proper disbursement of and accounting for Federal funds paid to the State commission under this part, and (B) for the making of such reports, in such form and containing such information, as may be reasonably necessary to enable the Commissioner to perform his functions under this part.

* * * * * * *

TITLE VII—AMENDMENTS TO HIGHER EDUCATION FACILITIES ACT OF 1963

* * * * * * *

TITLE VIII—GENERAL PROVISIONS

DEFINITIONS

SEC. 801. As used in this Act—

(a) The term "institution of higher education" means an educational institution in any State which (1) admits as regular students only persons having a certificate of graduation from a school providing secondary education, or the recognized equivalent of such a certificate, (2) is legally authorized within such State ro provide a program of education beyond secondary education (3) provides an educational program for which it awards a bachelor's degree or provides not less than a two-year program which is acceptable for full credit toward such a degree, (4) is a public or other nonprofit institution, and (5) is accredited by a nationally recognized accrediting agency or association or, if not so accredited, (*A*) *is an institution with respect to which the Commissioner has determined that there is satisfactory assurance, considering the resources available to the institution, the period of time, if any, during which it has operated, the effort it is making to meet accreditation standards, and the purpose for which this determination is being made, that the institution will meet the accreditation standards of such an agency or association within a reasonable time, or* (*B*) is an institution whose credits are accepted, on transfer, by not less than three institutions which are so accredited, for credit on the same basis as if transferred from an institution so accredited. Such term also includes any [business school or technical institution] *school which provides not less than a one-year program of training to prepare students for gainful employment in a recognized occupation and* which meets the provisions of clauses (1), (2), (4), and (5). For purposes of this subsection, the Commissioner shall publish a list of nationally recognized accrediting agencies or associations which he determines to be reliable authority as to the quality of training offered.

* * * * * * *

NATIONAL FOUNDATION ON THE ARTS AND HUMANITIES ACT OF 1965

(Public Law 89–209)

(Cordon Print of Public Law 89–209 as it would be amended if S. 1126 were to be enacted into law. Changes in existing law made by the bill are shown as follows: Existing law proposed to be omitted is enclosed in black brackets, new matter is printed in italic, existing law in which no change is proposed is shown in roman.)

AN ACT To provide for the establishment of the National Foundation on the Arts and the Humanities to promote progress and scholarship in the humanities and the arts in the United States, and for other purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "National Foundation on the Arts and the Humanities Act of 1965".

* * * * * * *

FINANCIAL ASSISTANCE FOR STRENGTHENING INSTRUCTION IN THE HUMANITIES AND THE ARTS

[SEC. 12. (a) There is authorized to be appropriated to the Commissioner of Education for the fiscal year ending June 30, 1966, and each of the two succeeding years the sum of $500,000; but for the fiscal year ending on June 30, 1969, and each subsequent fiscal year, only such sums may be appropriated as the Congress may hereafter authorize by law. Such sums shall be used for (1) making payments to State educational agencies under this section for the acquisition of equipment (suitable for use in providing education in the humanities and the arts) and for minor remodeling described in subsection (c)(1) of this section, and (2) making loans authorized in subsection (f) of this section.

[(b) Sums appropriated pursuant to subsection (a) shall be allotted in the same manner is provided in subsections (a) and (c) of section 302 of the National Defense Education Act of 1958, as amended (72 Stat. 1588; 20 U.S.C. 442).

[(c) Any State which desires to receive payments under this section shall submit to the Commissioner of Education through its State educational agency a State plan which meets the requirements of section 1004(a) of the National Defense Education Act of 1958, as amended (72 Stat. 1603; 20 U.S.C. 584), and—

[(1) sets forth a program under which funds paid to the State from its allotment under subsection (b) of this section will be expended soley for projects approved by the State educational agency for (A) acquisition of special equipment (other than supplies consumed in use), including audiovisual materials and equipment, and printed and published materials (other than textbooks), suitable for use in providing education in the humanities and the arts, and (B) minor remodeling of laboratory or other space used for such materials or equipment;

[(2) sets forth principles for determining the priority of such projects in the State for assistance under this section and provides for undertaking such projects, insofar as financial resources available therefor make possible, in the order determined by the application of such principles;

[(3) provides an opportunity for a hearing before the State educational agency to any applicant for a project under this section; and

[(4) provides for the establishment of standards on a State level for special equipment acquired with assistance furnished under this section.

[(d) The Commissioner shall approve any State plan and any modification thereof which complies with the provisions of subsection (c) of this section and the provisions of subsections (b) and (c) of section 1004 of the National Defense Education Act, as amended (72 Stat. 1603; 20 U.S.C. 584), shall apply to this section in the same manner as applicable to State plans under that Act.

[(e) Payments to States from allotments made under subsection (b) shall be made in the same manner as provided in section 304 of the National Defense Education Act of 1958, as amended (72 Stat. 1589; 20 U.S.C. 444).

[(f) The Commissioner shall allot and administer loans to nonprofit private schools in the same manner as provided in section 305 of the National Defense Education Act of 1958, as amended (72 Stat. 1590; 20 U.S.C. 445).]

TEACHER TRAINING INSTITUTES

SEC. [13.] *12.* (a) There is authorized to be appropriated to the Commissioner of Education for the fiscal year ending June 30, 1966, and each of the two succeeding years the sum of $500,000; but for the fiscal year ending on June 30, 1969, and each subsequent fiscal year, only such sums may be appropriated as the Congress may hereafter authorized by law. Such sums shall be used to enable the Commissioner of Education to arrange, through grants or contracts, with institutions of higher education for the operation by them within the United States of short term or regular sessions institutes for advanced study, including study in the use of new materials, to improve the qualification of individuals who are engaged in or preparing to engage in the teaching or supervising or training of teachers, of such subjects as will, in the judgment of the Commissioner, after consultation with the Chairman of the National Endowment for the Humanities, strengthen the teaching of the humanities and the arts in elementary and secondary schools.

(b) Each individual who attends an institute operated under the provisions of this part shall be eligible (after application therefor) to receive a stipend at the rate of $75 per week for the period of his attendance at such institute, and each such individual with one or more dependents shall receive an additional stipend at the rate of $15 per week for each such dependent.

PRESIDENTIAL APPOINTMENTS

SEC. [14.] *13.* The President is requested to make such appointments (including any nomination) as are provided for in this Act within ninety days after the enactment of this Act.

NATIONAL VOCATIONAL STUDENT LOAN INSURANCE ACT OF 1965

(Public Law 89–287)

(Cordon Print of Public Law 89–209 as it would be amended if S. 1126 were to be enacted into law. Changes in existing law made by the bill are shown as follows: Existing law proposed to be omitted is enclosed in black brackets, new matter is printed in italic, existing law in which no change is proposed is shown in roman.)

AN ACT To establish a system of loan insurance and a supplementary system of direct loans, to assist students to attend post-secondary business, trade, technical, and other vocation schools

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "National Vocational Student Loan Insurance Act of 1965".

STATEMENT OF PURPOSE AND APPROPRIATIONS AUTHORIZED

SEC. 2. (a) The purpose of this Act is to enable the Commissioner (1) to encourage States and nonprofit private institutions and organizations to establish adequate loan insurance programs for students in eligible institutions (as defined in section 17), (2) to provide a Federal program of student loan insurance for students who do not have reasonable access to a State or private nonprofit program of student loan insurance covered by an agreement under section 9(b) and (3) to pay a portion of the interest on loans to qualified students which are insured under this Act or under a program of a State or of a nonprofit private institution or organization which meets the requirements of section [9(a)(1)(A)] *9(a)(1)(C)*.

(b) For the purpose of carrying out this Act—

(1) there are authorized to be appropriated to the vocational student loan insurance fund (established by section 13) (A) the sum of $250,000, and (B) such further sums, if any, as may become necessary for the adequacy of the vocational student loan insurance fund,

(2) there are authorized to be appropriated, for payments under section 9 with respect to interest on insured loans, such sums for the fiscal year ending June 30, 1966, and succeeding fiscal years, as may be required therefor, and

(3) there are authorized to be appropriated the sum of $1,875,000 for making advances pursuant to section 3 for the reserve funds of State and nonprofit private student loan insurance programs.

Sums appropriated under clauses (1) and (2) of this subsection shall remain available until expended, and sums appropriated under clause (3) of this subsection shall remain available for advances under section 3 until the close of the fiscal year ending June 30, 1968.

* * * * * * *

SCOPE AND DURATION OF *FEDERAL* LOAN INSURANCE PROGRAM

SEC. 5. (a) The total principal amount of new loans made and installments paid pursuant to lines of credit (as defined in section 17) to students covered by *Federal* insurance under this Act shall not exceed $75,000,000 in the fiscal year ending June 30, 1966, [and in each of the two succeeding fiscal years] *and such limitations as may be specified in appropriations Act for each of the seven succeeding fiscal years, except that for the fiscal year ending June 30, 1968, such amount shall not exceed the lesser of such limitation and $75,000,000.* Thereafter, *Federal* insurance pursuant to this part may be granted only for loans made (or for loan installments paid pursuant to lines of credit) to enable students, who have obtained prior loans insured under this Act, to continue or complete their educational programs; but no insurance may be granted for any loan made or installment paid after June 30, [1972] *1977.*

(b) The Commissioner may, if he finds it necessary to do so in order to assure an equitable distribution of the benefits of this Act, assign, within the maximum amounts specified in subsection (a), insurance quotas applicable to eligible lenders, or to States or areas, and may from time to time reassign unused portions of these quotas.

LIMITATIONS *UNDER FEDERAL INSURANCE PROGRAM* ON INDIVIDUAL LOANS AND ON INSURANCE

SEC. 6. (a) No loan or loans by one or more eligible lenders in excess of [$1,000] *$1,500* in the aggregate to any student in any academic year or its equivalent shall be covered by *Federal* insurance under this Act. The aggregate insured unpaid principal amount of all such insured loans made to any student shall not at any time exceed [$2,000] *$3,000.* The annual insurable limit per student shall not be deemed to be exceeded by a line of credit under which actual payments by the lender to the borrower will not be made in any year in excess of the annual limit.

(b) The insurance liability on any loan *federally* insured under this Act shall be 100 per centum of the unpaid balance of the principal amount of the loan. Such insurance liability shall not include liability for interest whether or not that interest has been added to the principal amount of the loan.

SOURCES OF FUNDS

SEC. 7. Loans made by eligible lenders in accordance with this Act shall be insurable whether made from funds fully owned by the lender or from funds held by the lender in a trust or similar capacity and available for such loans.

ELIGIBILITY OF STUDENT BORROWERS AND TERMS OF STUDENT LOANS *UNDER FEDERAL INSURANCE PROGRAM*

SEC. 8. (a) A loan by an eligible lender shall be insurable *by the Commissioner* under the provisions of this Act only if—

(1) made to a student who (A) has been accepted for enrollment at an eligible institution or, in the case of a student already attending such institution, is in good standing there as determined by the institution, and (B) is carrying at least one-half of the

normal full-time workload as determined by the institution, and (C) has provided the lender with a statement of the institution which sets forth a schedule of the tuition and fees applicable to that student and its estimate of the cost of board and room for such a student; and

(2) evidenced by a note or other written agreement which—

(A) is made without security and without endorsement, except that if the borrower is a minor and such note or other written agreement executed by him would not, under the applicable law, create a binding obligation, endorsement may be required.

(B) provides for repayment (except as provided in subsection (c)) of the principal amount of the loan in installments over a period of not less than three years (unless sooner repaid) nor more than six years beginning not earlier than nine months nor later than one year after the date on which the student ceases to carry at an eligible institution at least one-half the normal full-time academic workload as determined by the institution in accordance with regulations of the Commissioner, except (i) as provided in clause (C) below, (ii) that the period of the loan may not exceed nine years from the execution of the note or written agreement,

(C) provides that periodic installments of principal need not be paid, but interest shall accrue and be paid, during any period (i) during which the borrower is pursuing a full-time course of study at an institution outside the States approved for this purposes by the Commissioner, (ii) not in excess of three years, during which the borrower is a member of the Armed Forces of the United States, [or] (iii) not in excess of three years during which the borrower is in service as a volunteer under the Peace Corps Act, *or (iv) not in excess of three years during which the borrower is in service as a volunteer under title VIII of the Economic Opportunity Act of 1964,* and any such period shall not be included in determining the six-year period or the nine-year period provided in clause (B) above,

(D) provides for interest on the unpaid principal balance of the loan at a yearly rate, not exceeding the applicable maximum rate prescribed and defined by the Secretary (within the limits set forth in subsection (b)) on a national, regional, or other appropriate basis, which interest shall be payable in installments over the period of the loan except that, if provided in the note or other written agreement, any interest payable by the student may be deferred until not later than the date upon which repayment of the first installment of principal falls due, in which case interest that has so accrued during that period may be added on that date to the principal (but without thereby increasing the insurance liability under this Act),

(E) provides that the lender will not collect or attempt to collect from the borrower any portion of the interest on the note which is payable by the Commissioner under this Act,

(F) entitles the student borrower to accelerate without penalty repayment of the whole or any part of the loan, and

(G) contains such other terms and conditions, consistent with the provisions of this Act and with the regulations issued by the Commissioner pursuant to this Act, as may be agreed upon by the parties to such loan, including, if agreed upon, a provision requiring the borrower to pay to the lender, in addition to principal and interest, amounts equal to the insurance premiums payable by the lender to the Commissioner with respect to such loan.

(b) No maximum rate of interest prescribed and defined by the Secretary for the purposes of clause (2)(D) of subsection (a) may exceed 6 per centum per annum on the unpaid principal balance of the loan, except that under circumstances which threaten to impede the carrying out of the purposes of this Act, one or more of such maximum rates of interest may be as high as 7 per centum per annum on the unpaid principal balance of the loan.

(c) The total of the payments by a borrower during any year of any repayment period with respect to the aggregate amount of all loans to that borrower which are insured under this Act shall not be less than $360 or the balance of all such loans (together with interest thereon), whichever amount is less.

FEDERAL PAYMENTS TO REDUCE STUDENT INTEREST COSTS

SEC. 9. (a)(1) Each student who has received a loan—

(A) which is insured *by the Commissioner* under this Act;

(B) which was made for study at an eligible institution under a State student loan program (meeting criteria prescribed by the Commissioner), and which was contracted for, and paid to the student, within the period specified by paragraph (4); or

(C) which is insured under a program of a State or of a nonprofit private institution or organization which was contracted for, and paid to the student, within the period specified in paragraph (4), and which—

(i) in the case of a loan insured prior to July 1, 1967, was made by an eligible lender and is insured under a program which meets the requirements of subparagraph (E) of subsection (b)(1) and provides that repayment of such loan shall be in installments beginning not earlier than sixty days after the student ceases to pursue a course of study (as described in subparagraph (D) of subsection (b)(1)) at an eligible institution, or

(ii) in the case of a loan insured after June 30, 1967, is insured under a program covered by an agreement made pursuant to subsection (b),

and whose adjusted family income is less than $15,000 at the time of execution of the note or written agreement evidencing such loan, shall be entitled to have paid on his behalf and for his account to the holder of the loan, over the period of the loan, a portion of the interest on the loan. For the purposes of this paragraph, the adjusted family income of a student shall be determined pursuant to regulations of the Commissioner in effect at the time of the execution of the note or written agreement evidencing the loan. Such regulation shall provide for taking into account such factors, including family size, as the Commissioner deems appropriate.

(2) The portion of the interest on a loan which a student is entitled to have paid on his behalf and for his account to the holder of the loan pursuant to paragraph (1) shall be equal to the total amount of the interest on the unpaid principal amount of the loan which accrues prior to the beginning of the repayment period of the loan, *or which accrues during a period in which principal need not be paid (whether or not such principal is in fact paid) by reason of a provision described in subsection (c) of this section or in subsection (a)(2)(C) of the preceding section*, and 3 per centum per annum of the unpaid principal amount of the loan (excluding interest which has been added to principal) thereafter; but such portion of the interest on a loan shall not exceed, for any period, the amount of the interest on that loan which is payable by the student after taking into consideration the amount of any interest on that loan which the student is entitled to have paid on his behalf for that period under any State or private loan insurance program. In the absence of fraud by the lender, that determination shall be final so far as the obligation of the Commissioner to pay a portion of the interest on a loan is concerned. The holder of a loan with respect to which payments are required to be made under this section shall be deemed to have a contractual right, as against the United States, to receive from the Commissioner the portion of interest which has been so determined. The Commissioner shall pay this portion of the interest to the holder of the loan on behalf of and for the account of the borrower at such times as may be specified in regulations in force when the applicable agreement entered into pursuant to subsection (b) was made, or if the loan was made by a State or is insured under a program which is not covered by such an agreement, at such times as may be specified in regulations in force at the time the loan was paid to the student.

(3) Each holder of a loan with respect to which payments of interest are required to be made by the Commissioner shall submit to the Commissioner, at such time or times and in such manner as he may prescribe, statements containing such information as may be required by or pursuant to regulation for the purpose of enabling the Commissioner to determine the amount of the payment which he must make with respect to that loan.

(4) The period referred to in subparagraphs (B) and (C) of paragraph (1) of this subsection shall begin on the date of enactment of this Act and end on June 30, 1968, except that, in the case of a loan made or insured under a student loan or loan insurance program, to enable a student who has obtained a prior loan made or insured under such program to continue his educational program, such period shall end on June 30, 1972.

(5) No payment may be made under this section with respect to the interest on a loan made from a student loan fund established under title II of the National Defense Education Act of 1958.

(b)(1) Any State or any nonprofit private institution or organization may enter into an agreement with the Commissioner for the purpose of entitling students who receive loans which are insured under a student loan insurance program of that State, institution, or organization to have made on their behalf payments equal to those provided for in subsection (a) if the Commissioner determines that the student loan insurance program—

[(A) authorizes the insurance of not less than $1,000 in loans to any individual student in any academic year or its equivalent (as determined under regulations of the Commissioner);] *(A) provides that the program will insure loans made to any individual student in any academic year or its equivalent (as determined under regulations of the Commissioner) of up to but not in excess of $1,500, which limit shall not be deemed exceeded by a line of credit under which actual payments by the lender to the borrower will not be made in any such year in excess of such annual limit; and provides that the aggregate insured unpaid principal amount of all insured loans under the program made to any student shall not at any time exceed $3,000;*

(B) authorizes the insurance of loans to any individual student for at least two academic years of study or their equivalent (as determined under regulations of the Commissioner);

(C) provides that (i) the student borrower shall be entitled to accelerate without penalty the whole or any part of an insured loan, (ii) *except as provided in subsection (c) of this section,* the period of any insured loan may not exceed nine years from the date of execution of the note or other written evidence of the loan, and (iii) the note or other written evidence of any loan may contain such provisions relating to repayment in the event of default by the borrower as may be authorized by regulations of the Commissioner in effect at the time such note or written evidence was executed;

(D) subject to subparagraph (C) *of this paragraph and except as provided by subsection (c) of this section,* provides that, where the total of the insured loans to any student which are held by any one person exceeds $1,000, repayment of such loans shall be in installments over a period of not less than three years nor more than six years beginning not earlier than nine months nor later than one year after the student ceases to pursue a full-time course of study at an eligible institution, except that if the program provides for the insurance of loans for part-time study at eligible institutions the program shall provide that such repayment period shall begin not earlier than nine months nor later than one year after the student ceases to carry at an eligible institution at least one-half the normal full-time academic workload as determined by the institution;

(E) authorizes interest on the unpaid balance of the loan at a yearly rate not in excess of 6 per centum per annum on the unpaid principal balance of the loan (exclusive of any premium for insurance which may be passed on to the borrower);

(F) insures not less than 90 per centum of the unpaid principal of loans insured under the program;

(G) does not provide for collection of an excessive insurance premium;

(H) provides that the benefits of the loan insurance program will not be denied any student because of his family income or lack of need if his adjusted family income at the time the note or written agreement is executed is less than $15,000 (as determined pursuant to the regulations of the Commissioner prescribed under section 9(a)(1));

(I) provides that a student may obtain insurance under the program for a loan for any year of study at an eligible institution; and

(J) in the case of a State program, provides that such State program is administered by single State agency, or by one or more nonprofit private institutions or organizations under the supervision of a single State agency[.]; *(K) provides that the total of the payments by a borrower during any year of any repayment period with respect to the aggregate amount of all loans to that borrower which are insured under the program shall not be less than $360 or the balance of all such loans (together with interest thereon), whichever amount is less.*

(2) Such an agreement shall—

(A) provide that the holder of any such loan will be required to submit to the Commissioner, at such time or times and in such manner as he may prescribe, statements containing such information as may be required by or pursuant to regulation for the purpose of enabling the Commissioner to determine the amount of the payment which he must make with respect to that loan;

(B) include such other provisions as may be necessary to protect the financial interest of the United States and promote the purposes of this Act and as are agreed to by the Commissioner and the State or private organization or institution; and

(C) provide for making such reports in such form and containing such information as the Commissioner may reasonably require to carry out his function under this Act and for keeping such records and for affording such access thereto as the Commissioner may find necessary to assure the correctness and verification of such reports.

(c) The Commissioner shall encourage the inclusion, in any State student loan program or any State or nonprofit private student loan insurance program meeting the requirements of subsection (a)(1)(B) or (C), of provisions authorizing or requiring that in the case of student loans covered by such program periodic installments of principal need not be paid, but interest shall accrue and be paid, during any period (i) during which the borrower is pursuing a full-time course of study at an institution of higher education (or at a comparable institution outside the States approved for this purpose by the Commissioner), (ii) not in excess of three years during which the borrower is a member of the Armed Forces of the United States, (iii) not in excess of three years during which the borrower is in service as a volunteer under the Peace Corps Act, or (iv) not in excess of three years during which the borrower is in service as a volunteer under title VIII of the Economic Opportunity Act of 1964. In the case of any such State or nonprofit private program containing such a provision any such period shall be excluded in determining the period specified in clause (ii) of subparagraph (C), or the maximum period for repayment specified in subparagraph (D), of subsection (b)(1) of this section.

* * * * * * *

[ADVISORY COUNCIL ON INSURED LOANS TO VOCATIONAL STUDENTS

[SEC. 15. (a) The Secretary shall establish in the Office of Education an Advisory Council on Insured Loans to Vocational Students, consisting of the Commissioner, who shall be Chairman, and eight members appointed, without regard to the civil service laws, by the

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Secretary. The membership of the Council shall include persons representing State loan insurance programs, private nonprofit loan insurance programs, financial and credit institutions, and eligible institutions.

[(b) The Advisory Council shall advise the Commissioner in the preparation of general regulations and with respect to policy matters arising in the administration of this Act, including policies and procedures governing the making of advances under section 3, the Federal payments to reduce student interest costs under section 9 and the making of loans under section 10.

[(c) Members of the Advisory Council, while attending meetings or conferences of such Council, or otherwise engaged in the business of such Council, shall be entitled to receive compensation at a rate fixed by the Secretary, but not exceeding $100 per diem, including travel time, and while so serving on the business of the Advisory Council away from their homes or regular places of business, they may be allowed travel expenses, including per diem in lieu of subsistence, as authorized by section 5 of the Administrative Expenses Act of 1946 (5 U.S.C. 73b-2), for persons in the Government service employed intermittently.][22]

PARTICIPATION BY FEDERAL COEDIT UNIONS IN FEDERAL, STATE, AND PRIVATE STUDENT LOAN INSURANCE PROGRAMS

SEC. [16.]*15.* * * *

DEFINITIONS

SEC. [17.]*16.* * * *

[22] For creation of comprehensive Advisory Council on Financial Aid to Students (absorbing the two student loan insurance councils), see the new § 481 of the Higher Education Act of 1965, above.

SECTION-BY-SECTION ANALYSIS OF S. 1126, THE "HIGHER EDUCATION AMENDMENTS OF 1967"

TITLE I—AMENDMENTS TO TITLE I OF THE HIGHER EDUCATION ACT OF 1965 (COMMUNITY SERVICE AND CONTINUING EDUCATION PROGRAMS)

Section 101. Extension of grant program

This section would extend the community service and continuing education program an additional 5 years, through fiscal year 1973, and would authorize the appropriation of such sums as may be necessary for such extended period.

Section 102. Extension of 75 percent Federal share through fiscal year 1969

Subsection (a) of this section would amend section 106(a) of the Higher Education Act of 1965, to provide that the Federal share of costs of State plans under this program, scheduled under present law to drop to 50 percent after fiscal year 1967, will continue at 75 percent for fiscal years 1968 and 1969, and will drop to 50 percent thereafter.

Subsection (b) provides that the amendment made by subsection (a) shall be effective with respect to grants awarded after the enactment of this act.

Section 103. Authorization of experimental or pilot projects

Subsection (a) would insert a new section 107 in title I of the Higher Education Act of 1965, to authorize the Commissioner of Education to use not to exceed 10 percent of the sums appropriated for each fiscal year under title I of the Higher Education Act of 1965, to make grants to or contracts with institutions of higher education for experimental or pilot projects in the fields of community service or continuing education, with emphasis on innovative approaches and on the promotion of comprehensiveness and coordination in these fields. The Commissioner would also be authorized to make grants to other public or private nonprofit agencies or organizations, or contracts with public or private organizations, including grants to or contracts with professional or scholarly associations, when an especially significant contribution will thereby be made toward attaining these objectives. (In order to permit insertion of the new section 107, former section 107 and the remaining sections of title I of the act would be renumbered accordingly.)

Subsection (b) would make conforming changes in section 103 (the allotment section) of the act to accommodate the new section 107.

Subsection (c) provides that the amendments made by this section shall be effective with respect to appropriations for fiscal years ending after June 30, 1967, except so much of any such appropriation as has been allotted prior to such amendment.

TITLE II—AMENDMENTS TO TITLE II OF THE HIGHER EDUCATION ACT OF 1965

PART A—COLLEGE LIBRARY RESOURCES

Section 201. Extension of program

This section would extend the college library resources program for an additional 5 years through fiscal year 1973, and would authorize the appropriation of such sums as may be necessary for such extended period.

Section 202. Revision of maintenance-of-effort requirement for special purpose grants

This section would modify the maintenance-of-effort requirement for special purpose grants set out in section 204(b) of the Higher Education Act of 1965 so as to make such requirement consistent with the maintenance-of-effort requirements for basic and supplemental grants set out in section 202 (a) and (b) of the Higher Education Act of 1965, as amended by section 9 of Public Law 89–752. As amended, section 204(b) of the Higher Education Act of 1965 would require that an applicant (or applicants jointly in the case of a combination of institutions) provide satisfactory assurance that it would expend during the fiscal year for which the grant was requested (from non-Federal funds) for all library purposes (exclusive of construction) an amount not less than the average annual amount it expended for such purposes during the 2-year period ending June 30, 1965, *or during the 2 fiscal years preceding the fiscal year for which the grant is requested, whichever is less.* This amendment would be effective with respect to applications for grants payable on or after the date of enactment of this bill.

PART B—LIBRARY TRAINING AND RESEARCH, AND LIBRARY SCHOOL PROGRAM DEVELOPMENT

Section 221. Extension of program

This section would extend the library training and research program for an additional 5 years through fiscal year 1973, and would authorize the appropriation of such sums as may be necessary for such extended period.

Section 222. Authorizing planning and development grants for library schools

This section would amend section 224(a) of the Higher Education Act of 1965 to authorize the Commissioner to make grants to institutions of higher education and other public or private agencies, institutions, and organizations, for the planning or development of programs for the opening of library or information science schools, or of programs intended to lead to the accreditation of such existing schools. This is in addition to the authority the Commissioner has under the Higher Education Act of 1965 to make grants or contracts for research and demonstration projects relating to the improvement of libraries or the improvement of training in librarianship and the dissemination of information derived therefrom. These amendments would be effective with respect to grants payable from appropriations for fiscal years ending after June 30, 1967.

Section 223. Clarifying authority of institution to use training institutes

This section would amend section 223(a) of the Higher Education Act of 1965 so as to clarify the fact that short-term or regular-session institutes are among the courses of training or study for which grants made under this section may be used.

PART C—STRENGTHENING COLLEGE AND RESEARCH LIBRARY RESOURCES THROUGH LIBRARY OF CONGRESS

Section 231. Extension of program

This section would extend for 2 fiscal years (i.e., fiscal years 1969 and 1970) section 231 of the Higher Education Act of 1965 which authorizes appropriations to the Commissioner of Education to enable him to transfer funds to the Librarian of Congress for specified purposes. For these 2 years, the appropriation of such sums as may be necessary would be authorized.

Section 232. Clarifying authority to purchase copies; increasing authority to prepare catalog and bibliographic materials; authorizing Librarian to act as acquisitions agent

This section would further amend section 231 of the Higher Education Act of 1965 by:

(1) making it clear that the purpose of clause (1) of the section will be met through the Librarian of Congress acquisition, so far as possible, of "copies of" all library materials currently published throughout the world which are of value to scholarship;

(2) authorizing the Librarian of Congress to compile and distribute catalog and general bibliographic information about library materials forming a part of the collection of the Library whether or not such materials were recently acquired under the authority of section 231; and

(3) adding authority to enable the Librarian of Congress to pay administrative costs of cooperative arrangements for acquiring library materials published outside of the United States, its territories, and possessions, and not readily obtainable outside of the country of origin, for institutions of higher education, combinations thereof, or other public or private nonprofit research libraries. The administrative cost would not include amounts paid to the vendor representing the purchase price of materials acquired.

TITLE III—STRENGTHENING DEVELOPING INSTITUTIONS

Section 301. Extension of program

This section would amend paragraph (1) of section 301(b) of the Higher Education Act of 1965 to extend the program for 5 fiscal years, through the fiscal year ending June 30, 1973, and would authorize to be appropriated such sums as may be necessary for such extended period.

TITLE IV—STUDENT ASSISTANCE

PART A—AMENDMENTS TO EDUCATION OPPORTUNITY GRANT PROGRAM

Section 401. Extension of program

This section would extend the program of educational opportunity grants under the Higher Education Act of 1965 for 5 fiscal years, through fiscal year 1973, and would authorize the appropriation of such sums as may be necessary for such extended period.

Section 402. Continuing work-study assistance to student in computing maximum allowable educational opportunity grant

This section would amend section 402 of the act to eliminate the exclusion of assistance from work-study programs in determining the maximum amount of an educational opportunity grant available to a student. The amendment would become effective with respect to educational opportunity grants awarded by an institution on or after September 1, 1967, or the date of the enactment of the act, whichever is later.

Section 403. Authorizing grants (as well as contracts) for talent search

This amendment to section 408 of the Higher Education Act of 1965 would permit the Commissioner to make grants to, as well as contracts with, State or local educational agencies or other public or nonprofit private agencies, institutions, or organizations for the purpose of encouraging full utilization of educational talent and would permit him to make contracts for such purposes with proprietary as well as with public or private nonprofit agencies, institutions, or organizations.

PART B—AMENDMENTS TO PROVISIONS ON STUDENT LOAN INSURANCE PROGRAMS

Section 421. Authorizing deferment of repayment of State or privately insured loan during attendance of student borrower at institution of higher education, or during military, Peace Corps, or VISTA service; requiring deferral of such repayment of federally insured loan under National Vocational Student Loan Insurance Act during VISTA service; and authorizing Federal payment of all interest accruing during any such attendance or service

Subsection (a) of this section would amend section 428 of the Higher Education Act of 1965 and section 9 of the National Vocational Student Loan Insurance Act of 1965 by adding a new subsection directing the Commissioner to encourage the inclusion, in State loan programs and State or nonprofit private loan insurance programs, of provisions authorizing or requiring that installments of principal need not be paid during any period during which the borrower is a full-time student in an institution of higher education, or for periods of not to exceed 3 years while the borrower is a member of the Armed Forces, a volunteer in the Peace Corps, or a volunteer in VISTA. In the case of any State or nonprofit private student loan insurance program containing such a provision, any such period would be excluded in determining the maximum period of the loan (15 years from the date of execution of the note) or the maximum period of repayment (10 years from payment of the first installment).

Subsection (b) would amend section 8(a)(2) of the National Vocational Student Loan Insurance Act of 1965 to provide in the case of a federally insured loan that periodic payments of principal need not be paid for a period of not to exceed 3 years while the borrower is a volunteer in VISTA. A similar provision was enacted by section 31 of the Economic Opportunity Amendments of 1965 with respect to loans insured pursuant to the Federal loan insurance program enacted by part B of title IV of the Higher Education Act of 1965.

Subsection (c) would amend section 428(a)(2) of the Higher Education Act of 1965 and section 9(a)(2) of the National Vocational Student Loan Insurance Act of 1965 to increase the interest payment made by the Commissioner from 3 percent per annum to the total amount of interest which accrues on the loan during any period during which payment of principal is deferred because the borrower is attending an institution of higher education or is a member of the Armed Forces, or a volunteer in the Peace Corps or VISTA.

Subsection (d), essentially a transitional provision, deals with the effect of the section upon loans made or insured pursuant to the loan insurance provisions of the Higher Education Act of 1965 or the National Vocational Student Loan Insurance Act of 1965 that are outstanding upon the enactment of this act. In such cases, where the borrower attends an institution of higher education, or performs up to 3 years of military, Peace Corps, or VISTA service after June 30, 1967, or the date of enactment of this bill, whichever is later, the subsection would (1) authorize deferral of repayment of any such loan from a State loan program, or insured under a State or private nonprofit program, during such attendance or service; (2) authorize deferral of repayment of any vocational loan made by the Commissioner or, with the consent of the lender, of any vocational loan insured by the Commissioner, for up to 3 years of such VISTA service; and (3) provide for the Commissioner to pay interest on any such outstanding loan (whether made under a State loan program, or insured under a State, Federal, or private nonprofit program) during any such attendance or service.

Section 422. Coordination between non-Federal and Federal programs with respect to maximum amounts of individual loans insured and minimum amounts of repayment installments on such loans

The amendments to be made by this section are designed to accomplish the general objective stated in the caption by establishing a maximum amount that may be loaned to any one student under a State or private nonprofit insured loan program, raising the maximum amount of loans insured by the Commissioner so as to equal the amount insurable under State or private nonprofit programs, and making the minimum annual repayment of such loans the same in the non-Federal programs as is currently in effect in the Federal programs.

Subsection (a). Annual maximum of $1,500, aggregate maximum of $7,500 for higher education.—Paragraph (1) of this subsection would amend section 428(b)(1)(A) of the Higher Education Act of 1965 to provide that the maximum amount of loans to any one student outstanding at any one time that may be insured by State and private nonprofit loan insurance agencies is $7,500. The amendment also clarifies the application of the loan ceilings per student to loans made pursuant to a time of credit.

Paragraph (2) of this subsection would amend section 425(a)(1) of such act to in effect provide that the maximum amount of loans to undergraduate (as well as graduate or professional) students that may be insured by the Federal Government in an academic year or its equivalent is $1,500 rather than $1,000, and that the aggregate amount of loans that may be outstanding at any one time for such students is $7,500 rather than $5,000, thus eliminating the existing distinction in this respect between the two categories of students.

Subsection (b). Annual maximum of $1,500, aggregate maximum of $3,000, for vocational education.—Paragraph (1) of this subsection would amend section 9(b)(1)(A) of the National Vocational Student Loan Insurance Act of 1965 to require that State or private nonprofit programs insure all loans to any one student, in a given year, until such loans totaled $1,500. No loan above $1,500 in any year would be insurable. The aggregate amount of insurable loans outstanding to any one student would be limited to $3,000.

Paragraph (2) of this subsection would amend section 6(a) of such act to set the maximum amount of loans to any student that may be insured by the Commissioner in an academic year or its equivalent at $1,500 rather than $1,000, and the aggregate amount of loans that may be outstanding at any one time for such student at $3,000 rather than $2,000.

Subsection (c). Minimum annual repayments for higher and vocational education.—This subsection would amend sections 428(b)(1) of the Higher Education Act of 1965 and 9(b)(1) of the National Vocational Student Loan Insurance Act of 1965 by adding a new subparagraph which provides that the State or private nonprofit guarantee agency must require the borrower to repay the total of his loans insured under the program of a given insurer at a rate of not less than $360 per year.

Subsection (d) provides that the amendments of this section would be effective with respect to loans made on or after the sixtieth day after enactment of this act, except that preexisting loans would be taken into account, after such sixtieth day, in computing the maximum allowable loans, and the minimum repayments.

Section 423. Extension of Federal loan insurance program

This section would amend section 424 of the Higher Education Act of 1965 and section 5 of the National Vocational Student Loan Insurance Act of 1965 so as to permit Federal insurance of loans in amounts specified in appropriations acts for an additional period of 5 years. For fiscal 1968, insured loans would be limited to the lesser of such amount and the limit now set by law.

Section 424. Correction of errors

This section would correct an incorrect reference in section 2(a) of the National Vocational Student Loan Insurance Act of 1965, would make a clarifying change in sections 5 and 8 of such act to parallel similar language in the Higher Education Act of 1965, and would make clear that the inclusion of institutions outside the State as eligible institutions under the higher education loan insurance program, by the International Education Act of 1965, was intended to be with respect to students who are nationals of the United States. No substantive change is effected by these amendments.

PART C—AMENDMENTS TO COLLEGE WORK-STUDY PROGRAM

Section 431. Extension of program

This section would extend the program for 5 years by authorizing the appropriation of such sums as may be necessary through the fiscal year ending June 30, 1973.

Section 432. Eighty percent Federal matching

Federal matching of work-study compensation, scheduled by section 124(f) of the Economic Opportunity Act of 1964 to drop from 90 to 75 percent after August 20, 1967, would be held at 80 percent after such date (or from the date of enactment of this act if such date is later than August 20).

Section 433. Authorizing work-study employment of 40 hours a week for students enrolled in classes during vacation periods

This section would amend paragraph (d) of section 124 of the Economic Opportunity Act of 1964 which now limits student employment under the program to 15 hours in any week in which classes in which the student is enrolled are in session, to permit the Commissioner to issue regulations under which students who are attending classes during vacation periods or comparable periods of additional or nonregular enrollment (as respects the particular student) may be employed under the program up to 40 hours a week.

Section 434. Revising maintenance-of-effort requirement to take into account additional forms of institutional student aid

This section would amend paragraph (e) of section 124 of the Economic Opportunity Act of 1964 to provide assurance that in each fiscal year during which the agreement with the Commissioner remains in effect, the institution will expend in its own program of student assistance, including programs of student employment (and exclusive of any component of such expenditures representing payment to the institution of Federal financial assistance as determined in accordance with regulations of the Commissioner), an amount that is not less than its average annual expenditure for such purposes during the 3 fiscal years preceding the fiscal year in which the agreement is entered into. As now in force, the section provides only that the level of expenditures be maintained in the institution's employment of its students. The amendment would be effective with respect to grants for which application is made by institutions after June 30, 1968, or, if later than June 30, the date of enactment of this act.

Section 435. Authorizing proprietary institutions to conduct work-study programs for off-campus work of their students for public or private nonprofit organizations

The amendments of this section are intended to authorize the Commissioner to make work-study grants to proprietary institutions otherwise meeting the current definition of "institution of higher education" to conduct work-study programs whereby students at such institutions would perform work in the public interest for public or private nonprofit organizations under the limitations now governing such work when performed by students in work-study programs who attend public or private nonprofit institutions of higher education. The amend-

ments would be effective with respect to work performed on or after June 30, 1967, or, if later, on or after the date of enactment of the bill.

Section 436. Providing for institutional expenses of administration of cooperative education demonstration programs

This section would add a new section to the work-study provisions of the act which would enable the Commissioner to permit institutions with which he has an agreement under section 123 to use a portion of the sums made available to it to cover its administrative expenses (which for this purpose may, among other expenses, include expenses of counseling and guidance, placement, and consulting services) in developing or carrying out a program to demonstrate or explore the feasibility or value of methods of cooperative education involving alternate periods of full-time academic study at the institution and periods of full-time public or private employment. The Commissioner would also be given the authority—if he determined that to do so would be in the interest of efficiency and economy—to prescribe regulations applicable to the types and amounts of administrative expenses for which work-study funds may be used both in connection with cooperative education programs and in connection with the administrative expenses provided for under section 124(b) of the present act, and such regulations would, if and to the extent provided therein, supersede the specific limitations now contained with respect to the institution's administrative expenses in section 124(b).

PART D—ADMENDMENTS TO NATIONAL DEFENSE STUDENT LOAN PROGRAM

Section 451. Extension of program

This section would amend sections 201, 202, and 206 of the National Defense Education Act of 1958 so as to extend the student loan program for an additional period of 5 years.

Section 452. Making 10-percent loan cancellation applicable to teacher service for certain special programs conducted by nonprofit institutions

This section would amend section 205 of the NDEA to provide for loan cancellation at the rate of 10 percent for each academic year (or its equivalent) of service as a full-time teacher in a program of special (including preschool) education or training designed to combat disadvantage, poverty, or unemployment which is conducted by an elementary or secondary school or an institution of higher education or by another public or nonprofit agency, institution, or organization.

This amendment would apply with respect to teaching service performed during academic years beginning on or after the enactment of this act, regardless of when the loan was made.

Sec. 453. Encouraging availability of non-Federal capital for national defense student loans by establishing a revolving fund from which institutions may obtain loans to capitalize student loan funds, and providing for allotment of Federal capital contributions to such funds

Subsection (a)(1) of this section of the bill would insert in title II of the NDEA a new section 207 which supersedes the present section 207

of the NDEA.[1] The new section 207 of the National Defense Education Act would authorize the Commissioner of Education, for a period of 6 fiscal years beginning with fiscal year 1968, to make loans from the revolving fund established by subsection (d) of section 207, to institutions of higher education to provide all or part of the capital needed for their student loan funds. With respect to student loan fund capital obtained from the Commissioner in the form of loans from the revolving fund, the institution would not be required to make the institutional contribution required under section 204(2)(B) of $1 for every $9 in Federal capital contributions; i.e., an institution's student loan fund could, under the bill, be financed 100 percent by loans from the Commissioner under section 207. Such loans could be made upon such terms and conditions as the Commissioner deemed appropriate (which would include a requirement that the loan proceeds be placed in a separate student loan fund or account), and would bear interest at a rate based on the going Federal rate on comparable U.S. obligations, the estimated cost of administering the section, and probable losses. (But see analysis of subsection (b) as to Commissioner's reimbursement obligation to institution with respect to interest.) If the Commissioner found it necessary, he could agree to provisions making the institution's obligation to the Commissioner on such a loan payable solely from particular revenues or other assets or security, including collections on loans to students.

Subsection (b) of the new section 207 would provide that if an institution borrows funds from the revolving fund, the Commissioner shall agree to reimburse the institution for (1) 90 percent of the loss to the institution from defaults on student loans: (2) the excess of the interest which the institution must pay on loans borrowed from the revolving fund over the interest received by the institution's student loan fund from student borrowers to whom loans were made from proceeds of the Federal loan made to the institution; (3) such administrative expenses as could be drawn by an institution under the existing section 204(3) (C) and (D) from a student loan fund if it were established with a Federal capital contribution (rather than a loan); and (4) the amount of principal canceled under the teacher forgiveness provisions (section 205(b)(3)).

Subsection (c) of the new section 207 would limit the total of the loans to institutions which could be made from the revolving fund in any fiscal year to such sums as are specified in appropriation acts.

Subsection (d) of the proposed new section 207 would establish on the books of the Treasury a revolving fund designated as the national defense education loan fund, to be available to the Commissioner without fiscal year limitation as a revolving fund for the purposes of the new section 207. This revolving fund would consist of appropriations paid into the fund under section 201 of the NDEA (under an amendment to that section explained below); the revolving fund would also receive any interest payments and principal repayments received by the Commissioner on loans made to institutions, and any other property or assets received in connection with the

[1] The superseded sec. 207 authorized appropriations aggregating $25 million for loans by the Commissioner to institutions of higher education to help finance an institution's capital contributions (usually one-ninth of the Federal capital contributions) to a student loan fund of the institution established pursuant to an agreement under sec. 204 of title II. Since the new program of loans to institutions would be more advantageous to institutions and would be available to finance institutional student loan funds entirely, as explained below, loans for the purpose specified in the superseded section would no longer be available.

Commissioner's operations under this section, including receipts from the sale of participations in institutional loan notes held in the fund, as authorized under the FNMA Charter Act. From time to time, and at least at the close of each fiscal year, the cumulative amount of appropriations deposited as capital in the revolving fund less the average undisbursed cash balance in the fund during the year, would bear interest at the going Federal rate, except that with the approval of the Treasury such interest payments will be deferred and compounded. Amounts estimated to cover the normal cost of administering the new section 207 would be transferred from the first not less than annually to the credit of the appropriation of the Office of Education for salaries and expenses. Subsection (d) further provides that if, at any time, accumulations in the fund exceed the present and any reasonably prospective requirements, as determined by the Commissioner, such excess may be transferred to the general fund of the Treasury.

Subsection (a)(2) of section 453 of the bill would amend section 201 of NDEA to provide that sums appropriated pursuant to this section shall be available to the Commissioner, not only for Federal capital contributions in accordance with agreements between the Commissioner and institutions of higher education (as in the present law), but also for payments into the revolving loan fund to the extent not required for capital contributions.

Subsection (a)(3) of section 453 of the bill would make a conforming amendment to section 208 of the NDEA.

Subsection (b) of section 453 of the bill would amend sections 202 (allotments among States) and 203 (suballotments to institutions within States) of the NDEA so that, as a first step, an amount equal to the amount appropriated under section 201 of the NDEA would be allocated according to the existing distribution formulas specified in sections 202 and 203 of NDEA, thus assuring each participating institution of a minimum amount of Federal assistance for its student loan fund (either in the form of Federal loans or, if it desired, Federal capital contributions) equal to the amount of Federal assistance available under the present distribution formulas specified in these sections. To the extent that an excess over the amount appropriated under section 201 of NDEA is available for assistance under title II of NDEA, for example, as the result of reasonable accumulations in the fund as a result of operations of the fund, an amount equal to that excess is to be allocated by the Commissioner among States and institutions within States in such manner as will best carry out the purposes of the program. In no event, of course, could the aggregate of loans to institutions for any fiscal year exceed the applicable ceiling established in an appropriation act for loans from the revolving fund under subsection (c) of the new section 207 of the NDEA (see analysis of subsec. (a)(1) of sec. 453 of the bill).

Subsection (c) of section 453 of the bill would make conforming amendments to section 206 of the NDEA (relating to capital contributions from student loan funds to which the Commissioner has made a Federal capital contribution). The subsection specifically provides that the provisions of the law covering the distribution of the assets of such a fund will not be applicable with respect to funds or accounts established with the proceeds of loans under section 207.

Subsection (d)(1) of section 453 of the bill would make the amendments effected by this section applicable in the case of payments to student loan funds made after the enactment of the bill, except as to payments honoring loan commitments made prior to enactment of the bill under the superseded section 207 of the NDEA.

Subsection (d)(2) of this section of the bill would authorize the Commissioner, if so requested by a participating institution, to convert a Federal capital contribution, made to an institution's student loan fund from funds appropriated under title II of the NDEA for the fiscal year 1968, to a loan under the new section 207 of the NDEA enacted by the bill.

PART E—AMENDMENTS TO THE NATIONAL DEFENSE FELLOWSHIP PROGRAM

Section 471. Extension of program

This section would amend sections 402(a) and 403(a) of the National Defense Education Act of 1958 so as to extend the program for 5 years, through the fiscal year ending June 30, 1973.

Section 472. Increasing maximum length of fellowship from 3 to 4 years in special circumstances and requiring institutional effort to encourage recipients to enter or continue teaching

Subsection (a) of this section would amend subsection (a) of section 402 of the National Defense Education Act of 1958 to permit the Commissioner to provide by regulation for the award of fellowships for as much as 4 years of study under special circumstances in which the purposes of the title would most effectively be served thereby.

Subsection (b) of this section would give the Commissioner discretion to extend in accordance with subsection (a) the period of study under fellowships already awarded prior to the enactment of this act. Such extensions would be made without regard to the limitation on numbers of fellowships that may be awarded under section 402.

Subsection (c) of this section would amend section 403(a) of the National Defense Education Act to require that the institution making an application give satisfactory assurance that it will make reasonable continuing efforts to encourage fellowship recipients to teach or continue to teach in institutions of higher education. Subsection (d) of this section provides that this above amendment shall be effective with respect to fellowships awarded on or after June 30, 1967, or on or after the date of enactment of this act, whichever date is later.

Section 473. Requiring stipends to be set in an amount consistent with those awarded for comparable fellowships

Subsection (a) of this section would amend section 404(a) of the National Defense Education Act of 1958 to provide for the Commissioner to pay fellowship stipends in amounts that are determined by him to be consistent with those paid under comparable federally supported programs. (Under present law, the stipend is fixed by statute at $2,000, $2,300, and $2,400 for the 1st, 2d, and 3d year of study, respectively, plus $400 for each dependent.)

Subsection (b) of section 473 provides that in no event shall the payment of stipends for any year in connection with fellowships awarded prior to the amendment made by subsection (a) be less than

the amounts that would have been paid for such year under the act were it not for such amendment.

PART F—ADVISORY COUNCIL ON STUDENT AID

Section 481. Establishment of advisory council on all financial aid to students; absorption of advisory councils on insured loans

Subsection (a) of section 481 would amend title IV of the Higher Education Act of 1965 by adding a new part, part E. Subsection (a) of section 481 of the new part would establish in the Office of Education an Advisory Council on Financial Aid to Students. The Commissioner, who is to be the chairman, is to appoint as members persons who shall include leading authorities in the field of education, persons representing State and private loan insurance programs, financial and credit institutions and institutions of higher education and other institutions eligible to participate in student aid under the Higher Education Act of 1965, the National Vocational Student Loan Insurance Act of 1965, and the National Defense Education Act of 1958.

Subsection (b) provides that the Council shall advise the Commissioner on policy questions that arise in the administration of financial student assistance programs and on evaluation of the effectiveness of such programs.

Subsection (c) specifies amounts of per diem compensation and travel expense to be paid to members of the Council.

Subsection (d) would authorize the Commissioner to furnish to the Council such technical assistance, and to make available to it such secretarial, clerical, and other assistance and pertinent data as the Council may require.

Subsection (b) of section 481 of this act would repeal section 433 of the Higher Education Act of 1965 and section 15 of the National Vocational Student Loan Insurance Act of 1965. Each of these sections provided for the establishment of an advisory council. These councils would in effect be absorbed by the broader Advisory Council on Financial Aid to Students. In keeping with the repealers, numbering of the sections of each act has been redesignated.

TITLE V—EDUCATION PROFESSIONS DEVELOPMENT (AMENDMENTS TO TITLE V OF HIGHER EDUCATION ACT OF 1965)

STATEMENT OF PURPOSE

Section 501 of the bill states that the purpose of the title is to coordinate, broaden, and strengthen training programs for teachers and other educational personnel at all levels.

AMENDMENTS TO PART A (GENERAL PROVISIONS) OF TITLE V OF HIGHER EDUCATION ACT OF 1965

Section 502 of the bill would amend the heading of title V of the Higher Education Act of 1965 by substituting "Education Professions Development" for the present heading of "Teacher Programs",[1] and would insert the following new sections in title V:

[1] Section 505 of the bill provides that title V of the Higher Education Act of 1965 may be cited as the "Education Professions Development Act."

A new section 501 would declare it to be the purpose of the Education Professions Development Act to improve the training of educational personnel by (1) developing information on educational personnel needs; (2) providing a broad range of training opportunities; (3) attracting a greater number of qualified persons into the teaching profession; (4) attracting persons who can stimulate creativity in the arts and other skills to undertake short-term or long-term assignments in education; and (5) helping to make educational personnel training programs more responsive to the needs of the schools and the colleges.

The existing section 501, which provides for an Advisory Council on Quality Teacher Preparation, would be deleted and in its place a new section 502 would establish a National Advisory Council on Education Professions Development. The President would appoint members of the Council, including persons broadly representative of the fields of education, the arts, the sciences, and the humanities, and of the general public.

A majority of the appointed members are to be persons engaged in teaching or in the education of teachers. The President would designate one of the appointed members as Chairman, and, in addition, the Commissioner of Education and one representative each from the National Science Foundation and the National Foundation on the Arts and the Humanities would be members of the Council.

The Council would advise the Secretary of Health, Education, and Welfare and the Commissioner with respect to policy matters and would review and evaluate this and other Federal programs for the training and development of educational personnel, making an annual report of its findings and recommendations.

A new section 503 would provide that the Commissioner shall from time to time appraise the Nation's existing and future educational personnel needs and the adequacy of the Nation's efforts to meet these needs, and shall publish an annual report detailing his views on the state of the education professions and trends in the future complexion of education programs in the Nation and indicating the Commissioner's plans as to allocation of Federal assistance under this title in relation to the plans and programs of other Federal agencies.

A new section 504 would authorize the Commissioner to enter into arrangements (through grants or contracts) with State or local educational agencies, institutions of higher education, or other public and private agencies, to attract qualified persons to the field of education.

A new section 505 would direct the Commissioner to consult with the National Science Foundation and the National Foundation on the Arts and the Humanities in the development and review of grant and contract programs under this title, so as to promote coordinated planning of programs to train educational personnel.

A new section 506 would provide that funds available to the Commissioner for grants or contracts under the Education Professions Development Act may be transferred to other Federal programs having the same purposes, and vice versa.

A new section 507 would authorize the Commissioner to employ experts and consultants to advise him with respect to the making of grants and contracts and the approving of programs under this title. (This would replace sec. 524(c) of title V of the act, which is limited to the teacher fellowship program.)

EXTENDING TEACHER FELLOWSHIP PROGRAM TO INCLUDE GRADUATE EDUCATION FOR PRESCHOOL AND ADULT AND VOCATIONAL EDUCATION PERSONNEL

Section 503(a) of the bill would amend the heading of part C of title V of the Higher Education Act of 1965 by inserting after "FELLOWSHIPS FOR TEACHERS" the words: "AND RELATED EDUCATIONAL PERSONNEL".

Section 503(b) would make changes in section 521 of the Higher Education Act of 1965 to make clear that fellowships now available for graduate education for personnel in elementary and secondary education may also include personnel for programs in preschool and adult and vocational education (including postsecondary vocational education).

In addition, the list of careers in fields directly related to education specifically mentioned in the present law would be extended to include the fields of educational and instructional television and radio, and child development.

Section 503(c) of the bill would amend section 522 of the Higher Education Act of 1965 so as to extend the authorization to award fellowships beyond the fiscal year 1968 and remove the present limitations restricting fellowships to study for advanced degrees other than doctor of philosophy and to a period of not to exceed 24 months.

Section 503(d) makes conforming amendments in section 523 of the act.

Section 503(e) would make technical deletions from section 524 of the act because substantially equivalent provisions are contained in amendments which will be made elsewhere in the act by sections 504 (program development grants) and section 502 (experts and consultants) of this bill.

Section 503(f) of the bill would amend section 525(b) of the act to provide that the $2,500 cost-of-education allowance to an institution having a fellowship program would be paid unless in the judgment of the Commissioner a program development grant under the new section 531 (added by sec. 504 of this bill) adequately covers the cost of education.

Section 503(g) of the bill would amend section 528 of the act (which authorizes the appropriation of certain sums to carry out part C through fiscal year 1968) to authorize the appropriations of such sums as may be necessary to carry out part C through fiscal year 1973.

NEW PARTS ADDED TO TITLE V OF HIGHER EDUCATION ACT OF 1965

Section 504 of the bill would further amend title V of the Higher Education Act of 1965 by adding the following new parts:

PART D—IMPROVING TRAINING OPPORTUNITIES FOR PERSONNEL SERVING IN PROGRAMS OF EDUCATION OTHER THAN HIGHER EDUCATION

A new section 531 would be added to title V authorizing the Commissioner to make grants to, and contracts with, institutions of higher education for developing or strengthening undergraduate or graduate programs (or other programs of advanced study) for improved train-

ing opportunities for persons who are pursuing or plan to pursue a career in preschool, elementary and secondary, or adult or vocational (including postsecondary) education.

Section 531(b) would provide that projects for developing or strengthening graduate programs may be approved for such purposes (among others) as encouraging imaginative and innovative approaches to teacher education, including new patterns of education and new curriculums; obtaining an appropriate geographical distribution of high quality graduate programs meeting the requirements of part C for an approved fellowship program; developing new or expanded graduate programs which provide opportunities to prepare persons to serve in school systems in nonteaching professional fields; or meeting other critical needs for advanced study in the area of educational personnel training.

Section 531(c) would provide that projects for developing or strengthening undergraduate programs may be approved for such purposes as improving teacher training curriculums and programs for the training of teacher aids and other nonprofessional educational personnel.

Section 532(a) would authorize the Commissioner to make arrangements with institutions of higher education, State or local educational agencies, or other public or private agencies (including professional or scholarly associations) for a variety of preservice and inservice training programs to prepare persons to undertake, or improve their qualifications for, service in preschool, elementary and secondary, and adult and vocational (including postsecondary) education programs, or in educational or related agencies, or in the fields of educational television or radio, or for supervising or training persons so serving.

Subsection (b) of section 532 gives examples of such training programs.

Subsection (c) provides that such preservice or inservice training may be provided through such means, among others, as short-term or regular session institutes, or refresher courses, seminars, symposia, workshops, or conferences.

Subsection (d) of section 532 would authorize stipends for participants in training programs under this section (including allowances for dependents) consistent with stipends under comparable federally supported programs.

Section 533 would authorize such sums as may be necessary to carry out part D through fiscal year 1973.

Part E—Training and Development Programs for Higher Education Personnel

A new section 541(a) would authorize the Commissioner to make grants to, and contracts with, institutions of higher education for developing or improving programs designed to provide substantially improved educational opportunities for persons who have, or are preparing to undertake, teaching, administrative, or other educational specialist responsibilities in institutions of higher education, or in educational or other related agencies, including projects involving advanced education for prospective college teachers, or the planning of changes in advanced-degree curriculums to meet needs for increased

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numbers of qualified teachers in particular subject-matter areas, or programs or courses designed to improve the administration of institutions of higher education. Preservice or inservice programs could include arrangements for short-term or regular-session institutes, refresher courses, seminars, symposia, workshops, or conferences. The Commissioner would be authorized to include in arrangements under this section with institutions of higher education provision for fellowships, traineeships, or internships.

New section 542 would authorize stipends for participants in training programs supported under this part, consistent with stipends under comparable federally supported programs.

New section 543 would authorize the appropriation of such sums as may be necessary to carry out part E through fiscal year 1973.

Section 505 of the bill would amend the redesignated section 508 of the Higher Education Act of 1965 (sec. 502 in the existing law) to provide that nothing contained in title V shall be construed to authorize payments under this title for training for a religious vocation or to teach theological subjects.

A new section 509 would provide that title V of the Higher Education Act of 1965 may be cited by the short title of the "Education Professions Development Act."

Section 507 of the bill provides effective dates for the amendments made to title V of the Higher Education Act of 1965 by this bill. In general, the amendments would be effective beginning with the fiscal year 1969, subject to authorization to the Commissioner to undertake advance planning and to disseminate information with respect to these amendments. Certain amendments would become effective at once; that is, the establishment of the National Advisory Council on Education Professions Development (superseding the Advisory Council on Quality Teacher Preparation), the broadened authority for employment of experts and consultants, the statement of purpose, the prohibition of payments to support training for a religious vocation or to teach theological subjects, and certain minor and technical amendments.

TITLE VI—INSTRUCTIONAL EQUIPMENT AND MATERIALS

PART A—EQUIPMENT AND MATERIALS FOR HIGHER EDUCATION (AMENDMENTS TO HIGHER EDUCATION ACT OF 1965)

Section 601. Extension of programs

This section would extend the programs under section 601 of the Higher Education Act of 1965 for 5 years through the fiscal year ending June 30, 1973, and would authorize for these purposes appropriations of such sums as may be necessary after the fiscal year 1968.

Section 602. Elimination of subject limitations; extension of assistance to graduate instruction

This section would amend part A of title VI of the Higher Education Act of 1965 so as to provide that eligible projects may include laboratory and other special equipment (except athletic or recreational equipment) suitable for use in providing education in all subject-matter areas, except the natural or physical sciences at the graduate level.

PART B—EQUIPMENT AND MATERIAL FOR ELEMENTARY AND SECONDARY EDUCATION (AMENDMENTS TO TITLE III OF NATIONAL DEFENSE EDUCATION ACT OF 1958)

Section 621. Extension of program

Section 621 would extend from fiscal year 1968 to fiscal year 1973 the authorization for appropriations for equipment under title III of the National Defense Education Act of 1958, and would authorize the appropriation of such sums as may be necessary for such extended period.

Section 622. Elimination of subject limitations, and merger of section 12 of National Foundation on Arts and Humanities Act in title III of National Defense Education Act

Effective July 1, 1967, section 622(a) would eliminate the subject-matter limitations from title III of the NDEA and would thus permit the acquisition under title III of the NDEA of 1958 of laboratory and other special equipment, and minor remodeling, suitable for providing education (other than athletic and recreational equipment), without restriction to education in specified subject-matter areas. (It would also allow appropriations under that title for supervisory or related services to be used in those subject-matter areas for which equipment and materials are acquired under the State plan, so long as the special provision relating to supervisory services remains in effect.) [1] It would, concomitantly, add a new section 306 to that title prohibiting the use of grants or loans under that title for equipment or materials to be used for sectarian instruction or religious worship.

In view of the elimination of the categorical limitation in title III of the NDEA, section 622(b) of the bill would repeal section 12 of the National Foundation on the Arts and the Humanities Act of 1965, relating to financial assistance for strengthening instruction in the humanities and the arts, and renumber the succeeding section of that act.

Section 622(c) would make all amendments in section 622 applicable beginning with fiscal year 1968.

Section 623. Provision for within-State equalization in State-imposed requirements for financial participation of project applicants

Section 623 would amend section 303(a) of the National Defense Education Act of 1958 by adding a new requirement to State plans under title III of that act to set forth any requirements imposed under the State plan on applicants for financial participation in projects assisted under title III, under the State plan, including those equalization provisions which take into account the relative resources available to applicants.

Section 624. Payment of State administrative expenses out of project funds in lieu of separate funding

Section 624 would amend sections 301, 302, 303(a), and 304 of the National Defense Education Act of 1958 to eliminate the separate authorization for appropriations for the administration of State plans and for supervisory services, and to authorize appropriations for the

[1] For proposed repeal of the special provisions for supervisory services, effective with the fiscal year 1969, see sec. 624 of the bill.

acquisition of equipment and minor remodeling to be used for administrative expenses (on the same 50–50 matching basis as expenditures for equipment). However, Federal payments with respect to expenditures for administration of the State plan could not exceed 3 percent of the total payments made to the State under title III, or $50,000 if greater. These amendments would be effective with respect to fiscal years beginning after June 30, 1968.

Section 625. Private schools: Authorizing less than maximum set-aside for loans; repealing loan allotment formula; and authorizing loans to American-sponsored schools serving American children abroad

Section 625 would, effective beginning with fiscal year 1968, amend sections 302 and 305 of the National Defense Education Act of 1958 to authorize the Commissioner of Education to reserve for loans to nonprofit private schools up to 12 percent, rather than require a reservation of a flat 12 percent, of the appropriations for title III of that act. It would eliminate the requirement for allotting those reserved amounts among the several States according to formula. It would also make eligible for loans schools outside the United States which the Commissioner of Education determines to be founded or sponsored by citizens of the United States and serving primarily children of American citizens.

Section 625 of the bill would further amend section 305 of the National Defense Education Act of 1958 to provide that the interest rate on such loans shall be based on the current average market yield on comparable outstanding marketable obligations of the United States, rather than on all outstanding marketable obligations of the United States.

TITLE VII—GUIDANCE, COUNSELING, AND TESTING (AMENDMENTS TO PART A OF TITLE V OF NATIONAL DEFENSE EDUCATION ACT OF 1958)

Section 701. Extension of program

Section 701 would extend for 5 years (from fiscal year 1968 to fiscal year 1973) the program under title V–A of the NDEA of 1958, and would authorize appropriations of such sums as may be necessary for the extended period.

TITLE VIII—LANGUAGE DEVELOPMENT (AMENDMENTS TO TITLE VI OF NATIONAL DEFENSE EDUCATION ACT OF 1958)

Section 801. Extension of program

Subsection (a) of this section would amend subsections (a) and (b) of section 601 of the National Defense Education Act of 1958 to extend the authority of the Secretary to arrange with institutions of higher education for the establishment and operation of language and area centers and to pay stipends to individuals undergoing advanced training in modern foreign languages until the close of the fiscal year ending June 30, 1969.

Subsection (b) of this section would amend section 603 of the National Defense Education Act of 1958, authorizing appropriations for carrying out title VI of the NDEA, by authorizing such appropriations, in such sums as may be necessary, for an additional fiscal year ending June 30, 1969.

TITLE IX—AMENDMENTS TO TITLE VIII (GENERAL PROVISIONS) OF HIGHER EDUCATION ACT OF 1965 AND TO TITLE X (MISCELLANEOUS PROVISIONS) OF NATIONAL DEFENSE EDUCATION ACT

Section 901. Establishment of advisory council on graduate education; abolition of Higher Education Facilities Act Advisory Committee

Subsection (a) of section 901 would amend the Higher Education Act of 1965 by adding a new section 805 captioned "Advisory Council on Graduate Education."

Under subsection (a) of the new section 805, there would be established, effective July 1, 1968, an Advisory Council on Graduate Education chaired by the Commissioner of Education. The Council would include—in addition to one representative each from the Office of Science and Technology in the Executive Office of the President, the National Science Foundation, the National Foundation on the Arts and Humanities—members appointed by the Commissioner from among leading authorities in the field of education.

Subsection (b) of the new section 805 provides that the Council shall advise the Commissioner on matters of general policy relating to his administration of programs relating to graduate education.

Subsection (c) of section 805 sets forth the amounts of per diem compensation and travel expense which may be paid to members of the Council.

Subsection (d) of section 805 would authorize the Commissioner to furnish such assistance (including technical, secretarial, and clerical assistance) and such pertinent data as the Council may require.

Effective July 1, 1968, subsection (b) of section 901 of the bill would repeal section 203 of the Higher Education Facilities Act of 1963 (which established an Advisory Committee on Graduate Education to advise the Commissioner on grants for construction of graduate facilities) and would amend section 202(c) of such act to provide that no application for a grant for construction of graduate facilities shall be approved by the Commissioner without the advice of a panel of competent specialists who are not employees of the Federal Government (instead of the superseded advice of the Advisory Committee on Graduate Education).

Section 902. Conforming definition of institution of higher education in Higher Education Act to other definitions used in the act and National Defense Education Act

Subsection (a) of section 902 would amend paragraph (a) of section 801 of the Higher Education Act of 1965 (the definition of institution of higher education) by adding a provision, common in other higher education assistance programs, which permits an institution to satisfy accreditation standards if it can present satisfactory assurance that it is making efforts with its available resources to meet accreditation standards and if the Commissioner determines that such standards will be met within a reasonable time.

Subsection (b) of section 902 amends such/definition so as to substitute for the phrase "business school or technical institution" in paragraph (a) of section 801 of the Higher Education Act of 1965 the more inclusive phrase "any school which provides not less than a 1-year program of training to prepare students for gainful employment in a recognized occupation."

Section 903. Provision in National Defense Education Act for the Trust Territory of the Pacific Islands, for schools of Department of Interior for Indian children, and for overseas dependents schools of Department of Defense.

Subsection (a) of section 903 of the bill would amend section 1008 of the National Defense Education Act of 1958 to provide for the allotment of funds to the Trust Territory of the Pacific Islands (in addition to the other outlying areas now referred to in sec. 1008) under section 302 of title III and section 502 of title V–A of the NDEA. In addition, the subsection provides that from the amount reserved under sections 302 and 502 of the NDEA the Commissioner shall allot such sums as may be necessary to the Secretary of Interior for elementary and secondary schools operated for Indian children by the Department of Interior, and to the Secretary of Defense for overseas dependents' schools of the Department of Defense, to carry out the purposes of title III and title V–A in those schools.

Subsection (b) of section 903 would amend sections 302(a)(1), 302(b), and 502(a) of the National Defense Education Act of 1958 to increase from 2 to 3 percent the maximum authorized to be reserved for outlying areas.

Subsection (c) of section 903 would make this section effective with respect to fiscal years ending after June 30, 1967.

Title X—Amendments to Higher Education Facilities Act of 1963

Section 1001. Adjustment of interest rate on loans

Subsection (a) of section 1001 would amend subsection (b) of section 303 of the Higher Education Facilities Act of 1963 to provide that the interest rate on construction loans shall be not less than (1) a rate determined by the Secretary of the Treasury taking into consideration the current average market yield on comparable outstanding marketable obligations of the United States, (2) reduced by such rate, not in excess of 1 percentage point, as may be determined by the Commissioner. The rate under the existing law is 3 percent or one-fourth of 1 percentage point above the average annual rate on all interest-bearing obligations of the United States, whichever is less.

Subsection (b) of section 1001 provides that this section applies to loans approved, or for which a commitment is made, on or after the date of enactment of this bill.

Section 1002. Extending authorization for higher education facilities construction assistance in major disaster areas

This section would amend section 408 of the Higher Education Facilities Act of 1963 to extend through the fiscal year ending July 1, 1972, the availability of assistance to institutions in areas which have suffered a major disaster.

EXPLANATION OF THE "HIGHER EDUCATION AMENDMENTS OF 1967"

(S. 1126, 90th Cong.)

TITLE I—AMENDMENTS TO TITLE I OF THE HIGHER EDUCATION ACT OF 1965

(Community Service and Continuing Education Programs)

Section 101. Extension of grant program

This section would amend section 101 of the Higher Education Act to extend the community service and continuing education program an additional 5 years through fiscal year 1973 and would authorize the appropriation of such sums as may be necessary for such extended period.

Section 102. Extension of 75 percent Federal share through fiscal year 1969

Subsection (a) of this section would amend section 106(a) of the Higher Education Act of 1965 to provide that the Federal share of costs of State plans under this program would continue at 75 percent for fiscal years 1968 and 1969, and would be 50 percent thereafter.

Subsection (b) provides that the amendment made by subsection (a) shall be effective with respect to grants awarded after the enactment of this act.

Under present law the Federal share would be 50 percent during fiscal year 1968. When the Higher Education Act was first enacted it was expected that a major part of the projects throughout each State would have been initiated so that reducing the Federal share would result in participating institutions of higher education assuming a larger part of the cost of programs already established and in operation. However, during the first 2 years of the program, $25 million (or 33⅓ percent) of the $75 million authorized was appropriated, curtailing the initiation of new projects and limiting the size of the projects established. The result is that if the program is to be of the size and scope originally intended by Congress, new projects must be established and present projects must be expanded. The cost of establishing and expanding projects is more expensive than maintaining an established project and a larger Federal share of the cost is necessary. By providing that the Federal share will continue to be 75 percent through fiscal year 1969, it can be assured that the community service and continuing education program will attain the size and scope necessary to fulfill the intent of Congress and at the same time be able to continue beyond that date with 50 percent Federal funding.

Section 103. Authorization of experimental or pilot projects

For the purpose of encouraging innovative projects designed to meet community problems and to meet problems of a regional or

national scope and of encouraging comprehensiveness and coordination of community service and continuing education programs, subsection (a) would redesignate sections 107 through 111 as 108 through 112 and insert a new section 107 in title I of the Higher Education Act of 1965, which would authorize the Commissioner of Education to use not to exceed 10 percent of the sums appropriated for the title to make grants to or contracts with institutions of higher education for experimental or pilot projects. The Commissioner would also be authorized to make grants to other public or private nonprofit agencies or organizations, or contracts with public or private organizations, including grants to or contracts with professional or scholarly associations, when an especially significant contribution will thereby be made toward attaining the purposes of this section.

The new section would make funds available for projects of a national or regional nature which could not be effectively coordinated with the plan of a single State and which show exceptional promise in meeting community problems or will effectively coordinate projects of similar nature and purpose, with the result that community service and continuing education programs will focus all available resources on special problems. The present law directs attention toward problems of a multi-State nature without setting aside funds for that purpose.

Subsection (b) would make conforming amendments to section 103 (the allotment section) of the act to reflect the addition of the new section 107.

Subsection (c) provides that the amendments made by this section would be effective with respect to appropriations for fiscal years ending after June 30, 1967, except so much of any such appropriation as has been allotted prior to such amendment.

TITLE II—AMENDMENTS TO TITLE II OF THE HIGHER EDUCATION ACT OF 1965

Part A—College Library Resources

Section 201. Extension of program

This section would amend 201 of the Higher Education Act to extend the college library resources program for an additional 5 years through fiscal year 1973, and would authorize the appropriation of such sums as may be necessary for such extended period.

Sec. 202. Revision of maintenance-of-effort requirement for special purpose grants

This section would amend 204(b) to modify the maintenance of effort requirement clause for special-purpose grants thus making such requirement consistent with the maintenance-of-effort requirements for basic and supplemental grants set out in section 202 of the act, as amended by section 9 of Public Law 89–752. As amended, such section 204(b) would require that an applicant (or applicants jointly in the case of a combination of institutions) provide satisfactory assurance that it would expend during the fiscal year for which the grant was requested (from non-Federal funds) for all library purposes (exclusive of construction) an amount not less than the average

annual amount it expended for such purposes during the 2-year period ending June 30, 1965, or during the 2 fiscal years preceding the fiscal year for which the grant is requested, whichever is less. This amendment would be effective with respect to applications for grants payable on or after the date of enactment of this bill.

The present law provides that fiscal year 1965 is the permanent base year for computing maintenance of effort. Since some institutions had unusually high expenditures in 1965 as the result of special gifts, the 1965 base is not realistic for determining the amount of expenditures normally made for library resources and services. The amendment would provide an alternate base year for those institutions which might be penalized by the 1965 base year. At the same time, since the 1965 base is retained, there is a guarantee that no institution could benefit from a title II grant by decreasing its expenditures over a 2-year period.

Part B—Library Training and Research, and Library School Program Development

Section 221. Extension of program

This section would amend section 221 of the Higher Education Act to extend the library training and research program for an additional 5 years through fiscal year 1973, and would authorize the appropriation of such sums as may be necessary for such extended period.

Section 222. Authorizing planning and development grants for library schools

This section would amend section 224(a) of the act to authorize the Commissioner to make grants to institutions of higher education and other public or private agencies, institutions, and organizations, for the planning or development of programs for the opening of library or information science schools, or of programs intended to lead to the accreditation of such existing schools. This is in addition to the authority the Commissioner has under the program to make grants or contracts for research and demonstration projects relating to the improvement of libraries or the improvement of training in librarianship and the dissemination of information derived therefrom. These amendments would be effective with respect to grants payable from appropriations for fiscal years ending after June 30, 1967.

Present law authorizes grants for the establishment of training programs (including student assistance) and for research and demonstration projects; however, no funds may be expended for planning and developing new schools of library and information science. The present number of schools cannot produce the number of librarians needed by the Nation's libraries. New schools must be established in order to increase the number of librarians under training.

Section 223. Clarifying authority of institution to use training institutes

This section would amend section 223(a) of the Higher Education Act of 1965 clarifying the fact that short-term or regular-session institutes are among the courses of training or study for which grants made under this section may be used.

PART C—STRENGTHENING COLLEGE AND RESEARCH LIBRARY RESOURCES THROUGH LIBRARY OF CONGRESS

Section 231. Extension of program

This section would amend section 231 of the Higher Education Act of 1965 to extend for 2 fiscal years (i.e., fiscal years 1969 and 1970), which authorizes appropriations to the Commissioner of Education to enable him to transfer funds to the Librarian of Congress for specified purposes. For such 2 years, the appropriation of such sums as may be necessary would be authorized.

Section 232. Clarifying authority to purchase copies; increasing authority to prepare catalog and bibliographic materials; authorizing Librarian to act as acquisitions agent

This section would further amend section 231 of the act by:

(1) making it clear the purpose of clause (1) of the section will be met through the Librarian of Congress' acquisition, so far as possible, of "copies of" all library materials currently published throughout the world which are of value to scholarship;

(2) authorizing the Librarian of Congress to compile and distribute catalog and general bibliographic information about library materials forming a part of the collection of the Library whether or not such materials were recently acquired under the authority of section 231; and

(3) adding authority to enable the Librarian of Congress to pay administrative costs of cooperative arrangements for acquiring library materials published outside of the United States, its territories and possessions, and not readily obtainable outside of the country of origin, for institutions of higher education, combinations thereof, or other public or private nonprofit research libraries. The administrative cost would not include amounts paid to the vendor representing the purchase price of materials acquired.

Part C of the title transferred $300,000 to the Librarian of Congress, for the acquisition of all library materials currently published throughout the world which are valuable to scholarship, and for the cataloging of such materials. This provision has brought about major international breakthroughs for research libraries in the United States. Previously, the libraries could not acquire catalog cards for the major portion of the foreign books they purchased. This led to competition for existing scarce catalogers. Through title II, the Library of Congress has now been able to accept the responsibility on behalf of the research community of the Nation. A system known as the shared cataloging program has been established to adapt descriptive entries in foreign national bibliographies for Library of Congress cards. In time, the program may even lead to international standardization. But, at present the Library of Congress is utilizing the results of cataloging practices in other countries through seven offices on three continents. Because of these efforts, all the cards adapted by the Library of Congress will become available to research libraries and the catalogs will become, increasingly, an international guide to materials of value to scholarships published around the globe.

TITLE III—STRENGTHENING DEVELOPING INSTITUTIONS

Section 301. Extension of program

This section would amend paragraph (1) of section 301(b) of the Higher Education Act of 1965 to extend the program for 5 fiscal years, through the fiscal year ending June 30, 1973, and would authorize to be appropriated such sums as may be necessary for such extended period.

TITLE IV—STUDENT ASSISTANCE

PART A—AMENDMENTS TO EDUCATION OPPORTUNITY GRANT PROGRAM

Section 401. Extension of program

This section would amend section 401(b) of the Higher Education Act of 1965 to extend the program of educational opportunity grants for 5 fiscal years, through fiscal year 1973, and would authorize the appropriation of such sums as may be necessary for such extended period.

Section 402. Continuing work-study assistance to student in computing maximum allowable educational opportunity grant

This section would amend section 402 of the act to eliminate the exclusion of assistance from work-study programs in determining the maximum amount of an educational opportunity grant available to a student. The amendment would become effective with respect to educational opportunity grants awarded by an institution on or after September 1, 1967, or the date of the enactment of the act, whichever is later.

The intent of Congress when this legislation was enacted was to encourage "packaging" of student financial assistance (i.e., combining an educational opportunity grant, and a grant or loan from other sources in the institution). In practice, this has frequently meant that half of the assistance has been in the form of an NDEA student loan. Instead of requiring a student to undertake too heavy an indebtedness in order to qualify for an educational opportunity grant, it would be preferable to permit part of the assistance to be earned by the student while participating in a work-study program. Thus, this amendment would provide increased flexibility to colleges in forming packages of financial assistance.

Section 403. Authorizing grants (as well as contracts) for Talent Search

This amendment to section 408 of the Higher Education Act of 1965 would permit the Commissioner to make grants to, as well as contracts with State or local educational agencies or other public or nonprofit private agencies, institutions, or organizations for the purpose of encouraging full utilization of educational talent and would permit him to make contracts for such purposes with proprietary as well as with public or private nonprofit agencies, institutions, or organizations.

PART B—AMENDMENTS TO PROVISIONS ON STUDENT LOAN INSURANCE PROGRAMS

Section 421. Authorizing deferment of repayment of State or privately insured loan during attendance of student borrower at institution of higher education, or during military, Peace Corps, or VISTA service; requiring deferral of such repayment of Federally Insured Loan Insurance Act during VISTA service; and authorizing Federal payment of all interest accruing during any such attendance or service

Subsection (a) of this section would amend section 428 of the Higher Education Act of 1965 and section 9 of the National Vocational Student Loan Insurance Act of 1965 by adding a new subsection (c) which would direct the Commissioner to encourage the inclusion, in State loan programs and State or nonprofit private loan insurance programs, of provisions authorizing or requiring that installments of principal need not be paid during any period during which the borrower is a full-time student in an institution of higher education, or for periods of not to exceed 3 years while the borrower is a member of the Armed Forces, a volunteer in the Peace Corps, or a volunteer in VISTA. In the case of any State or nonprofit private student loan insurance program containing such a provision, any such period would be excluded in determining the maximum period of the loan (15 years from the date of execution of the note) or the maximum period of repayment (10 years from payment of the first installment).

Subsection (b) would amend section 8(a)(2) of the National Vocational Student Loan Insurance Act of 1965 to provide in the case of a federally insured loan that periodic payments of principal need not be paid for a period of not to exceed 3 years while the borrower is a volunteer in VISTA. A similar provision was enacted by section 31 of the Economic Opportunity Amendments of 1965 (Public Law 89–253) with respect to loans insured pursuant to the Federal loan insurance program enacted by part B of title IV of the Higher Education Act of 1965.

Subsection (c) would amend section 428(a)(2) of the Higher Education Act of 1965 and section 9(a)(2) of the National Vocational Student Loan Insurance Act of 1965 to increase the interest payment made by the Commissioner from 3 percent per annum to the total amount of interest which accrues on the loan during any period during which payment of principal is deferred because the borrower is attending an institution of higher education or is a member of the Armed Forces, or a volunteer in the Peace Corps or VISTA.

Subsection (d), essentially a transitional provision, deals with the effect of the section upon loans made or insured pursuant to the loan insurance provisions of the Higher Education Act of 1965 or the National Vocational Student Loan Insurance Act of 1965 that are outstanding upon the enactment of this act. In such cases, where the borrower attends an institution of higher education, or performs up to 3 years of military, Peace Corps, or VISTA service after June 30, 1967, or the date of enactment of this bill, whichever is later, the subsection would (1) authorize deferral of repayment of any such loan from a State loan program, or insured under a State or private nonprofit program, during such attendnace or service; (2) authorize deferral of repayment of any vocational loan made by the Commissioner, or, with the consent of the lender, of any vocational loan

insured by the Commissioner, for up to 3 years of such VISTA service; and (3) provide for the Commissioner to pay interest on any such outstanding loan (whether made under a State loan program, or ininsured under a State, Federal, or private nonprofit program) during any such attendance or service.

The purpose of section 421 would be to authorize deferred repayment of loans made under State or private loan insurance programs while a student is attending college, or is in military, Peace Corps or VISTA service as is presently the case under the Federal program. This would be in accordance with the often expressed intent of Congress to avoid placing an unnecessary financial burden upon a borrower while in service to his country or while improving himself educationally in order to be of increased value to this Nation.

Section 422. Coordination between non-Federal and Federal programs with respect to maximum amounts of individual loans insured and minimum amounts of repayment installments on such loans

The amendments to be made by this section are designed to make the non-Federal and the Federal loan programs generally comparable with respect to the maximum amounts of individual insured loans and the minimum amounts of repayment installments on such loans. A maximum amount that may be loaned to any one student under a State or private nonprofit insured loan program would be established; the maximum amount of loans insured by the Commissioner would be raised so as to equal the amount insurable under State or private nonprofit programs; and the minimum annual repayment of such loans would be made the same in the non-Federal programs as is currently in effect in the Federal programs.

Subsection (a). Annual maximum of $1,500, aggregate maximum of $7,500 for higher education.—Paragraph (1) of this subsection would amend section 428(b)(1)(A) of the Higher Education Act of 1965 to provide that the maximum amount of loans to any one student outstanding at any one time that may be insured by State and private nonprofit loan insurance agencies is $7,500. The amendment would also clarify the application of the loan ceilings per student to loans made pursuant to a time of credit.

Paragraph (2) of subsection (a) would amend section 425(a)(1) of such act to in effect provide that the maximum amount of loans to undergraduate (as well as graduate or professional) students that may be insured by the Federal Government in an academic year or its equivalent is $1,500 rather than $1,000, and that the aggregate amount of loans that may be outstanding at any one time for such students is $7,500 rather than $5,000, thus eliminating the existing distinction in this respect between the two categories of students.

Subsection (b). Annual maximum of $1,500, aggregate maximum of $3,000, for vocational education.—Paragraph (1) of this subsection would amend section 9(b)(A) of the National Vocational Student Loan Insurance Act of 1965 to require that State or private nonprofit programs insure all loans to any one student, in a given year, until such loans totaled $1,500. No loan above $1,500 in any year would be insurable. The aggregate amount of insurable loans outstanding to any one student would be limited to $3,000.

Paragraph (2) of subsection (b) would amend section 6(a) of such act to set the maximum amount of loans to any student that may be

insured by the Commissioner in an academic year or its equivalent at $1,500 rather than $1,000, and the aggregate amount of loans that may be outstanding at any one time for such student at $3,000 rather than $2,000,

Subsection (c). Minimum annual repayments for higher and vocational education.—This subsection would amend sections 428(b)(1) of the Higher Education Act of 1965 and 9(b)(1) of the National Vocational Student Loan Insurance Act of 1965 by adding a new subparagraph which provides that the State or private nonprofit guarantee agency must require the borrower to repay the total of his loans insured under the program of a given insurer at a rate of not less than $360 per year.

Subsection (d) provides that the amendments of this section would be effective with respect to loans made on or after the 60th day after enactment of this act, except that preexisting loans would be taken into account, after such 60th day, in computing the maximum allowable loans, and the minimum repayments.

Section 423. Extension of Federal loan insurance program

This section would amend section 424 of the Higher Education Act of 1965 and section 5 of the National Vocational Student Loan Insurance Act of 1965 so as to permit Federal insurance loans in amounts specified in appropriations acts for an additional period of 5 years. For fiscal 1968, insured loans would be limited to the lesser of such amount and the limit now set by law.

Section 424. Correction of errors

This section would correct an incorrect reference in section 2(a) of the National Vocational Student Loan Insurance Act of 1965, would make a clarifying change in sections 5 and 8 of such act to parallel similar language in the Higher Education Act of 1965, and would make clear that the inclusion of institutions outside the State as eligible institutions under the higher education loan insurance program, by the International Education Act of 1965, was intended to be with respect to students who are nationals of the United States. No substantive change is effected by these amendments.

Part C—Amendments to College Work-Study Program

Section 431. Extension of program

This section would amend section 442 of the Higher Education Act to extend the program for 5 years by authorizing the appropriation of such sums as may be necessary through the fiscal year ending June 30, 1973.

Section 432. Eighty-percent Federal matching

This section would amend section 124(f), of the Economic Opportunity Act of 1964, concerning Federal matching of work-study compensation, to provide that the Federal share would be 80 percent after August 20, 1967 (or from the date of enactment of this act if such date is later than August 20). Present law provides that such Federal share shall be 75 percent.

Numerous institutions of higher education have indicated that if the Federal share in the program were dropped to 75 percent, they would not be able to continue their present levels of participation. By hold-

ing the Federal share at 80 percent, few, if any, colleges and universities would be forced to arbitrarily cut back their work-study proframs, thus insuring that needy students would not lose this source of assistance.

Section 433. Authorizing work-study employment of 40 hours a week for students enrolled in classes during vacation periods

This section would amend paragraph (d) of section 124 of the Economic Opportunity Act of 1964 which now limits student employment under the program to 15 hours in any week in which classes in which the student is enrolled are in session, to permit the Commissioner to issue regulations under which students who are attending classes during vacation periods or comparable periods of additional or nonregular enrollment (as respects the particular student) may be employed under the program up to 40 hours a week.

In the past, individual students have sometimes taken a summer course or perhaps two. While one or two courses take up only a small portion of the students' time, under the present law, they would not be allowed to be employed under the work-study program for a full 40 hours a week. This amendment would allow students to work full-time during summer vacation and other vacation periods in which a class or classes were held, provided that a 40-hour work-week will not conflict with their studies.

Section 434. Revising maintenance-of-effort requirement to take into account additional forms of institutional student aid

This section would amend paragraph (e) of section 124 of the Economic Opportunity Act of 1964 to provide assurance that in each fiscal year during which the agreement with the Commissioner remains in effect, the institution will expend in its own program of student assistance, including programs of student employment (and exclusive of any component of such expenditures representing payment to the institution of Federal financial assistance as determined in accordance with regulations of the Commissioner), an amount that is not less than its average annual expenditure for such purposes during the 3 fiscal years preceding the fiscal year in which the agreement is entered into. As now in force, the section provides only that the level of expenditures be maintained in the institution's employment of its students. The amendment would be effective with respect to grants for which application is made by institutions after June 30, 1968, or, if later than June 30, the date of enactment of this act.

This amendment would bring the program into conformity in all respects with the legislative policy set forth in other Federal assistance programs of not allowing an institution to use Federal funds to release the institution's funds in any particular form of student assistance for general operation uses.

Section 435. Authorizing proprietary institutions to conduct work-study programs for off-campus work of their students for public or private nonprofit organizations

The amendments made by this section authorize the Commissioner to make work-study grants to proprietary institutions otherwise meeting the current definition of "institution of higher education" to conduct work-study programs whereby students at such institutions would perform work in the public interest for public or private non-

profit organizations under the limitations now governing such work when performed by students in work-study programs who attend public or private nonprofit institutions of higher education. The amendments would be effective with respect to work performed on or after June 30, 1967, or, if later, on or after the date of enactment of the bill.

This amendment would permit students in proprietary business schools to earn money to pay part of the cost of their education. The students could work only for public or nonprofit organizations; they would be restricted from working for the proprietary institution. The benefit of the assistance would accrue solely to the students.

Section 436. Providing for institutional expenses of administration of cooperative education demonstration programs

This section would add a new section 123 to the work-study provisions of the act and would redesignate the present sections 125 and 126 as 126 and 127, respectively. The new section 125 would enable the Commissioner to permit institutions with which he has an agreement under section 123 to use a portion of the sums made available to it to cover its administrative expenses (which for this purpose may, among other expenses, include expenses of counseling and guidance, placement, and consulting services) in developing or carrying out a program to demonstrate or to explore the feasibility or value of methods of cooperative education involving alternate periods of full-time academic study at the institution and periods of full-time public or private employment. The Commissioner would also be given the authority—if he determined that to do so would be in the interest of efficiency and economy—to prescribe regulations applicable to the types and amounts of administrative expenses for which work-study funds may be used both in connection with cooperative education programs and in connection with the administrative expenses provided for under section 124(b) of the present act, and such regulations would, if and to the extent provided therein, supersede the specific limitations now contained with respect to the institution's administrative expenses in section 124(b).

The purpose of this new section is to encourage the investigation and establishment of cooperative education programs. This type of program has been shown to provide valuable practical education through full-time work periods and is a valuable source of financial assistance.

Part D—Amendemnts to National Defense Student Loan Program

Section 451. Extension of program

This section would amend sections 201, 202, and 206 of the National Defense Education Act of 1958 so as to extend the student loan program for an additional period of 5 years.

Section 452. Making 10-percent loan cancellation applicable to teacher service for certain special programs conducted by nonprofit institutions

This section would amend section 205 of the NDEA to provide for loan cancellation at the rate of 10 percent for each academic year (or its equivalent) of service as a full-time teacher in a program of special (including preschool) education or training designed to combat dis-

advantage, poverty, or unemployment which is conducted by an elementary or secondary school or an institution of higher education or by another public or nonprofit agency, institution, or organization. In keeping with the philosophy that loan forgiveness may attract students into career areas of greatest benefit to our Nation and its goals, loan cancellation benefits would be extended to teachers in programs of special education or training designed to combat disadvantage, poverty, or unemployment.

This amendment would apply with respect to teaching service performed during academic years beginning on or after the enactment of this act, regardless of when the loan was made.

Section 453. Encouraging availability of non-Federal capital for national defense student loans by establishing a revolving fund from which institutions may obtain loans to capitalize student loan funds, and providing for allotment of Federal capital contributions to such funds

Subsection (a)(1) of this section of the bill would insert in title II of the NDEA a new section 207 which would supersede the present section 207.[1] The new section 207 of the National Defense Education Act would authorize the Commissioner of Education, for a period of 6 fiscal years beginning with fiscal year 1968, to make loans, from the revolving fund established by subsection (d) of section 207, to institutions of higher education to provide all or part of the capital needed for their student loan funds. With respect to student loan fund capital obtained from the Commissioner in the form of loans from the revolving fund, the institution would not be required to make the institutional contribution required under section 204(2)(B) of $1 for every $9 in Federal capital contributions; i.e., an institution's student loan fund could, under the bill, be financed 100 percent by loans from the Commissioner under section 207. Such loans could be made upon such terms and conditions as the Commissioner deemed appropriate (which would include a requirement that the loan proceeds be placed in a separate student loan fund or account), and would bear interest at a rate based on the going Federal rate on comparable U.S. obligations, the estimated cost of administering the section, and probable losses. (But see analysis of subsection (b) as to Commissioner's *reimbursement* obligation to institution with respect to interest.) If the Commissioner found it necessary, he could agree to provisions making the institution's obligation to the Commissioner on such a loan payable solely from particular revenues or other assets or security, including collections on loans to students.

Subsection (b) of the new section 207 would provide that if an institution borrows funds from the revolving fund, the Commissioner shall agree to reimburse the institution for (1) 90 percent of the loss to the institution from defaults on student loans; (2) the excess of the interest which the institution must pay on loans borrowed from the revolving fund over the interest received by the institution's student loan fund from student borrowers to whom loans were made from proceeds of the Federal loan made to the institution; (3) such

[1] The superseded section 207 authorized appropriations aggregating $25 million for loans by the Commissioner to institutions of higher education to help finance an institution's capital contributions (usually one-ninth of the Federal capital contributions) to a student loan fund of the institution established pursuant to an agreement under section 204 of title II. Since the new program of loans to institutions would be more advantageous to institutions and would be available to finance institutional student loan funds entirely, as explained below, loans for the purpose specified in the superseded section would no longer be available

administrative expenses as could be drawn by an institution under the existing section 204(3) (C) and (D) from a student loan fund if it were established with a Federal capital contribution (rather than a loan); and (4) the amount of principal canceled under the teacher forgiveness provisions (sec. 205(b)(3)).

Subsection (c) of the new section 207 would limit the total of the loans to institutions which could be made from the revolving fund in any fiscal year to such sums as are specified in appropriation acts.

Subsection (d) of the proposed new section 207 would establish on the books of the Treasury a revolving fund designated as the National Defense Education Loan Fund, to be available to the Commissioner without fiscal year limitation as a revolving fund for the purposes of the new section 207. This revolving fund would consist of appropriations paid into the fund under section 201 of the NDEA (under an amendment to that section explained below); the revolving fund would also receive any interest payments and principal repayments received by the Commissioner on loans made to institutions, and any other property or assets received in connection with the Commissioner's operations under this section, including receipts from the sale of participations in institutional loan notes held in the fund, as authorized under the FNMA Charter Act. From time to time, and at least at the close of each fiscal year, the cumulative amount of appropriations deposited as capital in the revolving fund less the average undisbursed cash balance in the fund during the year, would bear interest at the going Federal rate, except that with the approval of the Treasury such interest payments will be deferred and compounded. Amounts estimated to cover the normal cost of administering the new section 207 would be transferred from the first not less than annually to the credit of the appropriation of the Office of Education for salaries and expenses. Subsection (d) further provides that if, at any time, accumulations in the fund exceed the present and any reasonably prospective requirements, as determined by the Commissioner, such excess may be transferred to the general fund of the Treasury.

Subsection (a) (2) of section 453 of the bill would amend section 201 of NDEA to provide that sums appropriated pursuant to this section shall be available to the Commissioner, not only for Federal capital contributions in accordance with agreements between the Commissioner and institutions of higher education (as in the present law), but also for payments into the revolving loan fund to the extent not required for capital contributions.

Subsection (a) (3) of section 453 of the bill would make a conforming amendment to section 208 of the NDEA.

Subsection (b) of section 453 of the bill would amend sections 202 (allotments among States) and 203 (suballotments to institutions within States) of the NDEA so that, as a first step, an amount equal to the amount appropriated under section 201 of the NDEA would be allocated according to the existing distribution formulas specified in sections 202 and 203 of NDEA, thus assuring each participating institution of a minimum amount of Federal assistance for its student loan fund (either in the form of Federal loans or, if it desired, Federal capital contributions) equal to the amount of Federal assistance available under the present distribution formulas specified in these sections. To the extent that an excess over the amount appropriated

under section 201 of NDEA is available for assistance under title II of NDEA, for example, as the result of reasonable accumulations in the fund as a result of operations of the fund, an amount equal to that excess is to be allocated by the Commissioner among States and institutions within States in such manner as will best carry out the purposes of the program. In no event, of course, could the aggregate of loans to institutions for any fiscal year exceed the applicable ceiling established in an appropriation act for loans from the revolving fund under subsection (c) of the new section 207 of the NDEA (see analysis of subsec. (a) (1) of sec. 453 of the bill).

Subsection (c) of section 453 of the bill would make conforming amendments to section 206 of the NDEA (relating to capital contributions from student loan funds to which the Commissioner has made a Federal capital contribution). The subsection specifically provides that the provisions of the law covering the distribution of the assets of such a fund will not be applicable with respect to funds or accounts established with the proceeds of loans under section 207.

Subsection (d)(1) of section 453 of the bill would make the amendments effected by this section applicable in the case of payments to student loan funds made after the enactment of the bill, except as to payments honoring loan commitments made prior to enactment of the bill under the superseded section 207 of the NDEA.

Subsection (d)(2) of this section of the bill would authorize the Commissioner, if so requested by a participating institution, to convert a Federal capital contribution, made to an institution's student loan fund from funds appropriated under title II of the NDEA for the fiscal year 1968, to a loan under the new section 207 of the NDEA enacted by the bill.

Under the existing section 207, the Commissioner of Education may lend funds to institutions of higher education to enable them to meet the 10 percent institutional contribution which is required as a prerequisite for making Federal capital contributions to the institution's student loan fund.

This section would extend this lending authority to enable institutions to borrow loan funds beyond the institution's 10 percent required share in order that student loan needs may be met in those States where the demand for loan funds exceeds the allocations available.

An institution which receives a loan from the Commissioner of Education under this section must repay these funds, but the notes would not mature before the loans made to students out of these funds have been repaid. To the extent that loans to students would be canceled under the teacher forgiveness provisions, and to the extent of 90 percent of the defaults in repayments by students, the Commissioner would reimburse the institution's loan fund in future years when these uncollectible amounts would have otherwise been repaid to the institution's loan fund by the student. Special appropriations would be made for this purpose as these payments are required, and would also be available for administrative expenses as well as the net cost of interest not covered by the interest payments on student loans.

Since these loans to institutions would be deposited in institutional loan funds and would be available for the same purpose as Federal capital contributions, the new proposal would in no way change the relationship of the student borrower to his institution's loan fund.

Neither would the institution's relationship to the Office of Education be changed in any material way, except that it would be eligible for loans beyond the 10 percent it can receive under the existing section 207.

Accordingly, the new proposal would not involve banks or financial institutions in any way in student financial aid affairs.

The significant change which this section would make in title II of NDEA relates not to the student borrower, and not to the institution's student loan fund, but rather to the institutional loan notes held by the Commissioner of Education.

The Federal Government's share of Federal capital contributions is required under the existing law to be returned to the Federal Government upon liquidation of the fund or at the termination of the program. In that sense, these Federal capital contributions are equivalent to loans. The procedures established under the Participation Sales Act of 1966 are designed to meet the frequently voiced criticism that under the Federal Government's bookkeeping system, repayable, self-liquidating investments have in the past been counted as debt, whereas loan notes in the hands of a private corporation would count as loans receivable—that is, as assets.

Since these institutional loan notes held by the Commissioner of Education would be assets, just as loans receivable held by a business are assets on its books, loan notes would quite properly be assigned to banks or other financial institutions in the business of holding interest-bearing investments. Of course, proceeds from the sale of such notes would constitute income which can then be available for more loans.

In the same way that loans for academic facilities are pooled under the Participation Sales Act, loan notes which institutions of higher education give to the Commissioner of Education in return for funds for their student loan funds, would be pooled in large blocks, so that, in effect, private investors would be purchasing shares, called participation certificates. These tranasactions would be handled by the Federal National Mortgage Association acting as trustee or broker for the Commissioner of Education. It has been demonstrated in other Federal programs that this means of pooling loan notes is more attractive than selling individual loan notes to private investors.

Although some State and other public institutions of higher education have legal restrictions on their authority to borrow funds, many of these institutions will still be able to participate in this program because, if an institution cannot pledge its credit toward repayment of the note, the new proposal would specifically provide for making the loan repayable solely from particular assets or revenues, such as amounts received by the college as repayments of student loans. If a few public institutions still could not borrow, straight Federal capital contributions, instead of loans, would be made to meet their needs.

Public institutions have participated in various Federal loan programs. As previously discussed, section 207 of the NDEA now permits loans to institutions of higher education to help finance the institution's capital contributions to its student loan fund. State borrowing restrictions for this new proposal would be very similar to those encountered in the administration of section 207. Since this section became operational in 1959, 55 State or other public institutions in 28 States have borrowed money for student financial aid purposes.

PART E—AMENDMENTS TO THE NATIONAL DEFENSE FELLOWSHIP PROGRAM

Section 471. Extension of program

This section would amend sections 402(a) and 403(a) of title IV of the National Defense Education Act of 1958 to extend the program for 5 years through the fiscal year ending June 30, 1973.

Section 472. Increasing maximum length of fellowship from 3 to 4 years in special circumstances and requiring institutional effort to encourage recipients to enter or continue teaching

Subsection (a) of this section would amend subsection (a) of section 402 of the act to permit the Commissioner to provide by regulation for the award of fellowships for as much as 4 years of study under special circumstances in which the purposes of the title would most effectively be served thereby.

The purpose of this is to promote flexibility in the face of special circumstances.

Subsection (b) of this section would give the Commissioner discretion to extend in accordance with subsection (a) the period of study under fellowships already awarded prior to the enactment of this act. Such extensions would be made without regard to the limitation on numbers of fellowships that may be awarded under section 402.

Subsection (c) of this section would amend section 403(a) of the act to require that the institution making an application give satisfactory assurance that it will make reasonable continuing efforts to encourage fellowship recipients to teach or continue to teach in institutions of higher education. Subsection (d) of this section provides that this above amendment shall be effective with respect to fellowships awarded on or after June 30, 1967, or on or after the date of enactment of this act, whichever date is later.

Subsection (c) would clearly emphasize the intent of Congress, with respect to title IV, to encourage and expand the training of college-level teachers.

Section 473. Requiring stipends to be set in an amount consistent with those awarded for comparable fellowships

Subsection (a) of this section would amend section 404(a) of the National Defense Education Act of 1958 to provide for the Commissioner to pay fellowship stipends in amounts that are determined by him to be consistent with those paid under comparable federally supported programs. (Under present law, the stipend is fixed by statute at $2,000, $2,300, and $2,400 for the first, second, and third year of study, respectively, plus $400 for each dependent).

This amendment would allow flexibility to insure a greater degree of uniformity in stipend awards among equivalent programs.

Subsection (b) of section 473 provides that in no event shall the payment of stipends for any year in connection with fellowships awarded prior to the amendment made by subsection (a) be less than the amounts that would have been paid for such year under the act were it not for such amendment.

Part F—Advisory Council on Student Aid

Section 481. Establishment of Advisory Council on all financial aid to students; absorption of advisory councils on insured loans.

Subsection (a) of section 481 would amend title IV of the Higher Education Act of 1965 by adding a new part, part E. Subsection (a) of section 481 of the new part would establish in the Office of Education an Advisory Council on Financial Aid to Students. The Commissioner, who is to be the Chairman, is to appoint as members persons who shall include leading authorities in the field of education, persons representing State and private loan insurance programs, financial and credit institution and institutions of higher education and other institutions eligible to participate in student aid under the Higher Education Act of 1965, the National Vocational Student Loan Insurance Act of 1965, and the National Defense Education Act of 1958.

Subsection (b) provides that the Council shall advise the Commissioner on policy questions that arise in the administration of financial student assistance programs and on evaluation of the effectiveness of such programs.

Subsection (c) specifies amounts of per diem compensation and travel expense to be paid to members of the Council.

Subsection (d) would authorize the Commissioner to furnish to the Council such technical assistance, and to make available to it such secretarial, clerical, and other assistance and pertinent data as the Council may require.

Subsection (b) of section 481 of this bill would repeal section 433 of the Higher Education Act of 1965 and section 15 of the National Vocational Student Loan Insurance Act of 1965. Each of these actions provided for the establishment of an advisory council. These councils would in effect be absorbed by the broader Advisory Council on Financial Aid to Students. In keeping with the repealers, numbering of the sections of each act has been appropriately redesignated.

The intent of section 481 is twofold. First, it would eliminate the needless duplication of effort and expense presently occurring because of the existence of several totally independent Advisory Councils. Second, it would make possible the promotion of a single, uniform, consistent policy in reference to student financial aid.

TITLE V—EDUCATION PROFESSIONS DEVELOPMENT (AMENDMENTS TO TITLE V OF HIGHER EDUCATION ACT OF 1965)

Statement of purpose

Section 501 of the bill states that the purpose of the title is to coordinate, broaden, and strengthen training programs for teachers and other educational personnel at all levels.

Amendments to Part A (General Provisions) of Title V of Higher Education Act of 1965

Section 502 of the bill would amend the heading of title V of the Higher Education Act of 1965 by substituting "Education Professions

Development" for the present heading of "Teacher Programs," [1] and would insert the following new sections in title V:

A new section 501 would declare it to be the purpose of the Education Professions Development Act to improve the training of educational personnel by (1) developing information on educational personnel needs; (2) providing a broad range of training opportunities; (3) attracting a greater number of qualified persons into the teaching profession; (4) attracting persons who can stimulate creativity in the arts and other skills to undertake short-term or long-term assignments in education; and (5) helping to make educational personnel training programs more responsive to the needs of the schools and the colleges.

The existing section 501, which provides for an Advisory Council on Quality Teacher Preparation, would be deleted and in its place a new section 502 would establish a National Advisory Council on Education Professions Development. The President would appoint members of the Council, including persons broadly representative of the fields of education, the arts, the sciences, and the humanities, and of the general public. A majority of the appointed members are to be persons engaged in teaching or in the education of teachers. The President would designate one of the appointed members as Chairman, and, in addition, the Commissioner of Education and one representative each from the National Science Foundation and the National Foundation on the Arts and the Humanities would be members of the Council.

The Council would advise the Secretary of Health, Education, and Welfare and the Commissioner with respect to policy matters and would review and evaluate this and other Federal programs for the training and development of educational personnel, making an annual report of its findings and recommendations.

A new section 503 would provide that the Commissioner shall appraise the Nation's existing and future educational personnel needs and the adequacy of the Nation's efforts to meet these needs, and shall publish an annual report detailing his views on the state of education professions and trends in the future complexion of education programs in the Nation and indicating the Commissioner's plans as to allocation of Federal assistance under this title in relation to the plans and programs of other Federal agencies. This would serve the purposes of (1) keeping Congress informed of the latest developments in this field and action undertaken by the Federal Government under title V of the Higher Education Act of 1965, and (2) giving the Commissioner occasional opportunities to obtain a review of the existing situation with reference to future necessary action.

A new section 504 would authorize the Commissioner to enter into arrangements (through grants or contracts) with State or local educational agencies, institutions of higher education, or other public and private agencies, to attract qualified persons to the field of education.

A new section 505 would direct the Commissioner to consult with the National Science Foundation and the National Foundation on the Arts and the Humanities in the development and review of grant and contract programs under this title, so as to promote coordinated planning of programs to train educational personnel.

[1] Sec. 505 of the bill provides that title V of the Higher Education Act of 1965 may be cited as the "Education Professions Development Act."

A new section 506 would provide that funds available to the Commissioner for grants or contracts under the Education Professions Development Act may be transferred to other Federal programs having the same purposes, and vice versa.

A new section 507 would authorize the Commissioner to employ experts and consultants to advise him with respect to the making of grants and contracts and the approving of programs under this title. (This would replace sec. 524(c) of title V of the act, which is limited to the teacher fellowship program.)

Extending Teacher Fellowship Program to Include Graduate Education for Preschool and Adult and Vocational Education Personnel

Section 503(a) of the bill would amend the heading of part C of title V of the Higher Education Act of 1965 by inserting after "fellowships for teachers" the words: "And related educational personnel".

Section 503(b) would make changes in section 521 of the Higher Education Act of 1965 to make clear that fellowships now available for graduate education for personnel in elementary and secondary education may also include personnel for programs in preschool and adult and vocational education (including postsecondary vocational education).

In addition, the list of careers in fields directly related to education specifically mentioned in the present law would be extended to include the fields of educational and instructional television and radio, and child development.

Section 503(c) of the bill would amend section 522 of the Higher Education Act of 1965 so as to extend the authorization to award fellowships beyond the fiscal year 1968 and remove the present limitations restricting fellowships to study for advanced degrees other than doctor of philosophy and to a period of not to exceed 24 months.

Section 503(d) makes conforming amendments in section 523 of the act.

Section 503(e) would make technical deletions from section 524 of the act because substantially equivalent provisions are contained in amendments which will be made elsewhere in the act by sections 504 (program development grants) and section 502 (experts and consultants) of this bill.

Section 503(f) of the bill would amend section 525(b) of the act to provide that the $2,500 cost-of-education allowance to the institution having a fellowship program would be paid *unless* in the judgment of the Commissioner a program development grant under the new section 531 (added by section 504 of this bill) adequately covers the cost of education.

Section 503(g) of the bill would amend section 528 of the act (which authorizes the appropriation of certain sums to carry out part C through fiscal year 1968) to authorize the appropriations of such sums as may be necessary to carry out part C through fiscal year 1973.

New Parts Added to Title V of Higher Education Act of 1965

Section 504 of the bill would further amend title V of the Higher Education Act of 1965 by adding the following new parts:

Part D—Improving Training Opportunities for Personnel Servingin Programs of Education Other Than Higher Education

A new section 531 would be added to title V authorizing the Commissioner to make grants to and contracts with institutions of higher education for developing or strengthening undergraduate or graduate programs (or other programs of advanced study) for improved training opportunities for persons who are pursuing or plan to pursue a career in preschool, elementary and secondary, or adult or vocational (including postsecondary) education.

Section 531(b) would provide that projects for developing or strengthening graduate programs may be approved for such purposes (among others) as encouraging imaginative and innovative approaches to teacher education, including new patterns of education and new curriculums; obtaining an appropriate geographical distribution of high quality graduate programs meeting the requirements of part C for an approved fellowship program; developing new or expanded graduate programs which provide opportunities to prepare persons to serve in school systems in nonteaching professional fields; or meeting other critical needs for advanced study in the area of educational personnel training.

Section 531(c) would provide that projects for developing or strengthening undergraduate programs may be approved for such purposes as improving teacher training curriculums and programs for the training of teacher aids and other nonprofessional educational personnel.

Section 532(a) would authorize the Commissioner to make arrangements with institutions of higher education, State or local educational agencies, or other public or private agencies (including professional or scholarly associations) for a variety of preservice and inservice training programs to prepare persons to undertake, or improve their qualifications for, service in preschool, elementary and secondary, and adult and vocational (including post secondary) education programs, or in educational or related agencies, or in the fields of educational television or radio, or for supervising or training persons so serving.

Subsection (b) of section 532 gives examples of such training programs.

Subsection (c) provides that such preservice or inservice training may be provided through such means, among others, as short-term or regular session institutes, or refresher courses, seminars, symposia, workshops, or conferences.

Subsection (d) of section 532 would authorize stipends for participants in training programs under this section (including allowance for dependents) consistent with stipends under comparable federally supported programs.

Section 533 would authorize such sums as may be necessary to carry out part D through fiscal year 1973.

Part E—Training and Development Programs for Higher Education Personnel

A new section 541(a) would authorize the Commissioner to make grants to, and contracts with, institutions of higher education for developing or improving programs designed to provide substantially

improved educational opportunities for persons who have, or are preparing to undertake teaching, administrative, or other educational specialist responsibilities in institutions of higher education, or in educational or other related agencies, including projects involving advanced education for prospective college teachers, or the planning of changes in advanced-degree curriculums to meet needs for increased numbers of qualified teachers in particular subject matter areas, or programs or courses designed to improve the administration of institutions of higher education. Preservice or inservice programs would include arrangements for short-term or regular-session institutes, refresher courses, seminars, symposia, workshops, or conferences. The Commissioner would be authorized to include in arrangements under this section with institutions of higher education provisions for fellowships, traineeships, or internships.

A new section 542 would authorize stipends for participants in training programs supported under this part, consistent with stipends under comparable federally supported programs.

A new section 543 would authorize the appropriation of such sums as may be necessary to carry out part E through fiscal year 1973.

Section 505 of the bill would amend the redesignated section 508 of the Higher Education Act of 1965 (section 502 in the existing law) to provide that nothing contained in title V shall be construed to authorize payments under this title for training for a religious vocation or to teach theological subjects.

A new section 509 would provide that title V of the Higher Education Act of 1965 may be cited by the short title of the "Education Professions Development Act."

Section 507 of the bill provides effective dates for the amendments made to title V of the Higher Education Act of 1965 by this bill. In general, the amendments would be effective beginning with the fiscal year 1969, subject to authorization to the Commissioner to undertake advance planning and to disseminate information with respect to these amendments. Certain amendments would become effective at once; i.e., the establishment of the National Advisory Council on Education Professions Development (superseding the Advisory Council on Quality Teacher Preparation), the broadened authority for employment of experts and consultants, the statement of purpose, the prohibition of payments to support training for a religious vocation or to teach theological subjects, and certain minor and technical amendments.

Federal programs have made a tremendous impact in meeting educational manpower needs in terms of both attracting new persons into the teaching profession and updating the skills of those already in the profession.

> Over 60,000 persons have attended 1,500 institutes authorized by title XI of the NDEA. Of these 13,000 have received special training in English, 10,000 in history, and 9,000 in modern foreign language studies.
>
> In the critical area of guidance, over 600 institutes authorized under title V–B have helped train nearly 21,000 school counselors.
>
> Although the fellowship program under title VI(c) of the Higher Education Act has been in operation for a few years, over 4,000 teachers have or are receiving graduate training because of its provisions.

Since 1965, the Office of Education has trained over 18,000 teachers in the field of vocational education.

The critical need for teachers continues and, according to a nationwide study, is more acute this school year than it was a year ago. Total enrollments in public elementary and secondary schools reached a new peak of 43 million last fall. To meet the demand for teachers, to reduce class size, to replace teachers leaving their positions, and to eliminate the number of teachers not having adequate training, 169,000 additional teachers are currently needed. Today, more than 5 percent of our schools' teaching force—approximately 90,500 full-time teachers—do not meet their States' certification standards. Properly qualified teachers must be employed if our country's children are to achieve their full educational development.

Current programs are handicapped in meeting the changing manpower requirements of our schools and colleges. Legislative authority is fragmented over many laws, each enacted to meet a specific need and each administered in accordance with separate legislative intent. Applications must be fashioned to meet the differences in law instead of educational needs. Current inflexibility is apparent.

1. Title XI of NDEA even after liberalization amendments cannot provide training at less than the graduate level, which precludes institutes for subprofessionals.

2. Institutional development grants are given only in conjunction with title V(c) HEA fellowships. Yet an institution of higher education may need such a grant to prepare for good fellowship program, or it may find its educational needs would be better met if such a development grant were made in conjunction with an institute program.

3. The teacher fellowship under title V(c) program does not support the training of junior and community college teachers. Yet, these institutions are growing rapidly and are experiencing the same staffing problems as schools at the elemetary and secondary education level. Although NDEA fellowships can be used to train junior and community college teachers, there is no flexibility to support pograms for them at less than the Ph. D. level.

4. Institute authority includes many subjects. Other important ones, however, are not supported, including health education, anthropology, sociology, psychology, business education, and physical education.

5. Present programs do not really permit a continuum of teacher education from the undergraduate level shrough the special programs of continuing education for master teachers. A university's master plan for such a continuum can now be supported only on a piecemeal basis, as each application is submitted and reviewed as a separate entity.

6. Education programs for specific educational groups or problems may not readily fit into any specific subject area—for example, the problems of teaching at the preschool level.

Such a patchwork of programs is ill equipped to solve some of the severe educational manpower needs and hardly lends itself toward sound educational planning at any level. The Educational Professions Development Act would begin to bring order out of our current patchwork of laws and would continue efforts to strengthen and broaden teacher education programs at all levels.

TITLE VI—INSTRUCTIONAL EQUIPMENT AND MATERIALS

PART A—EQUIPMENT AND MATERIALS FOR HIGHER EDUCATION (AMENDMENTS TO HIGHER EDUCATION ACT OF 1965)

Section 601. Extension of program

This section would amend section 610(b) of the Higher Education Act of 1965 to extend the programs under title VI of the act for 5 years through the fiscal year ending June 30, 1973, and would authorize for these purposes appropriations of such sums as may be necessary after the fiscal year 1968.

Section 602. Elimination of subject limitations; extension of assistance to graduate instruction

This section would amend sections 601(a) and 603 of part A of title VI of the Higher Education Act of 1965 so as to eliminate categories of subject matter areas and to provide that eligible projects may include laboratory and other special equipment (except athletic or recreational equipment) suitable for use in providing education in all subject matter areas, except the natural or physical sciences at the graduate level.

PART B—EQUIPMENT AND MATERIAL FOR ELEMENTARY AND SECONDARY EDUCATION (AMENDMENTS TO TITLE III OF NATIONAL DEFENSE EDUCATION ACT OF 1958)

Section 621. Extension of program

Section 621 would amend section 301 of the National Defense Education Act to extend from fiscal year 1968 to fiscal year 1973 the authorization for appropriations for equipment and would authorize the appropriation of such sums as may be necessary for such extended period.

Section 622. Elimination of subject limitations, and merger of section 12 of National Foundation on Arts and Humanities Act in title III of National Defense Education Act

Effective July 1, 1967, section 622(a) would amend section 303 of the National Defense Education Act to eliminate the subject-matter limitations from title III and would thus permit the acquisition under title III of laboratory and other special equipment, and minor remodeling, suitable for providing education (other than athletic and recreational equipment), without restriction to education in specified subject-matter areas. (It would also allow appropriations under that title for supervisory or related services to be used in those subject-matter areas for which equipment and materials are acquired under the State plan, so long as the special provision relating to to supervisory services remains in effect.)[2] It would, concomitantly, add a new section 306 to that title prohibiting the use of grants or loans under that title for equipment or materials to be used for sectarian instruction or religious worship.

In view of the elimination of the categorical limitation in title III of the NDEA, section 622(b) of the bill would repeal section 12 of

[2] For proposed repeal of the special provisions for supervisory services, effective with the fiscal year 1969 see section 624 of the bill.

the National Foundation on the Arts and the Humanities Act of 1965, relating to financial assistance for strengthening instruction in the humanities and the arts, and renumber the succeeding section of that act.

Section 622(c) would make all amendments in section 622 applicable beginning with fiscal year 1968.

Section 623. Provision for within-State equalization in State-imposed requirements for financial participation of project applicants

Section 623 would amend section 303(a) of the National Defense Education Act of 1958 by adding a new requirement to State plans under title III of that act to set forth any requirements imposed under the State plan on applicants for financial participation in projects assisted under title III, under the State plan, including those equalization provisions which take into account the relative resources available to applicants.

Section 624. Payment of State administrative expenses out of project funds in lieu of separate funding

Section 624 would amend sections 301, 302, 303(a), and 304 of the National Defense Education Act of 1958 to eliminate the separate authorization for appropriations for the administration of State plans and for supervisory services, and to authorize appropriations for the acquisition of equipment and minor remodeling to be used for administrative expenses (on the same 50–50 matching basis as expenditures for equipment). However, Federal payments with respect to expenditures for administration of the State plan could not exceed 3 percent of the total payments made to the State under title III, or $50,000 if greater. These amendments would be effective with respect to fiscal years beginning after June 30, 1968.

Section 625. Private schools: Authorizing less than maximum setaside for loans; repealing loan allotment formula; and authorizing loans to American-sponsored schools serving American children abroad

Section 625 would, effective beginning with fiscal year 1968, amend sections 302 and 305 of the National Defense Education Act of 1958 to authorize the Commissioner of Education to reserve for loans to nonprofit private schools up to 12 percent, rather than require a reservation of a flat 12 percent, of the appropriations for title III of that act. It would eliminate the requirement for allotting those reserved amounts among the several States according to formula. This would be done in view of the fact that private schools seeking loans under title III are not evenly distributed geographically across the country. It would also make eligible for loans schools outside the United States which the Commissioner of Education determines to be founded or sponsored by citizens of the United States and serving primarily children of American citizens.

This amendment would extend the benefits of title III to a large group of American children presently ineligible to receive them. It would be in accordance with recent moves to extend the benefits of other public laws to Indian children, migratory laborers' children, and children in Department of Defense schools.

Section 625 of the bill would further amend section 305 of the National Defense Education Act of 1958 to provide that the interest rate on such loans shall be based on the current average market yield

on comparable outstanding marketable obligations of the United States.

TITLE VII—GUIDANCE, COUNSELING, AND TESTING (AMENDMENTS TO PART A OF TITLE V OF NATIONAL DEFENSE EDUCATION ACT OF 1958)

Section 701. Extension of program

Section 701 would extend for 5 years (from fiscal year 1968 to fiscal year 1973) the program under title V–A of the NDEA of 1958, and would authorize appropriations of such sums as may be necessary for the extended period.

TITLE VIII—LANGUAGE DEVELOPMENT (AMENDMENTS TO TITLE VI OF NATIONAL DEFENSE EDUCATION ACT OF 1958)

Section 801. Extension of program

Subsection (a) of this section would amend subsections (a) and (b) of section 601 of the National Defense Education Act of 1958 to extend the authority of the Secretary to arrange with institutions of higher education for the establishment and operation of language and area centers and to pay stipends to individuals undergoing advanced training in modern foreign languages until the close of the fiscal year ending June 30, 1969.

Subsection (b) of this section would amend section 603 of the National Defense Education Act of 1958, authorizing appropriations for carrying out title VI of the NDEA, by authorizing such appropriations, in such sums as may be necessary, for an additional fiscal year ending June 30, 1969.

TITLE IX—AMENDMENTS TO TITLE VIII (GENERAL PROVISIONS) OF HIGHER EDUCATION ACT OF 1965 AND TO TITLE X (MISCELLANEOUS PROVISIONS) OF NATIONAL DEFENSE EDUCATION ACT

Section 901. Establishment of Advisory Council on Graduate Education; Abolition of Higher Education Facilities Act Advisory Committee

Subsection (a) of section 901 would amend the Higher Education Act of 1965 by adding a new section 805 captioned "Advisory Council on Graduate Education."

Under subsection (a) of the new section 805, there would be established, effective July 1, 1968, an Advisory Council on Graduate Education chaired by the Commissioner of Education. The Council would include—in addition to one representative each from the Office of Science and Technology in the Executive Office of the President, the National Science Foundation, the National Foundation on the Arts and Humanities—members appointed by the Commissioner from among leading authorities in the field of education.

Subsection (b) of the new section 805 provides that the Council shall advise the Commissioner on matters of general policy relating to his administration of programs relating to graduate education.

Subsection (c) of section 805 sets forth the amounts of per diem compensation and travel expense which may be paid to members of the Council.

Subsection (d) of section 805 would authorize the Commissioner to furnish such assistance (including technical, secretarial, and clerical assistance) and such pertinent data as the Council may require.

Effective July 1, 1968, subsection (b) of section 901 of the bill would repeal section 203 of the Higher Education Facilities Act of 1963 (which established an Advisory Committee on Graduate Education to advise the Commissioner on grants for construction of graduate facilities) and would amend section 202(c) of such act to provide that no application for a grant for construction of graduate facilities shall be approved by the Commissioner without the advice of a panel of competent specialists who are not employees of the Federal Government (instead of the superseded advice of the Advisory Committee on Graduate Education.)

Section 902. Conforming definition of institution of higher education in Higher Education Act to other definitions used in the act and National Defense Education Act

Subsection (a) of section 902 would amend paragraph (a) of section 801 of the Higher Education Act of 1965 (the definition of institution of higher education) by adding a provision, common in other higher education assistance programs, which permits an institution to satisfy accreditation standards if it can present satisfactory assurance that it is making efforts with its available resources to meet accreditation standards and if the Commissioner determines that such standards will be made within a reasonable time.

Subsection (b) of section 902 amends such definition so as to substitute for the phrase "business school or technical institution" in paragraph (a) of section 801 of the Higher Education Act of 1965 the more inclusive phrase "any school which provides not less than a 1-year program of training to prepare students for gainful employment in a recognized occupation."

The intent of this section would be to eliminate confusion and contradiction in definitions and to continue the policy of unity, conformity, and simplicity.

Section 903. Provision in National Defense Education Act for the Trust Territory of the Pacific Islands, for schools of Department of the Interior for Indian children, and for overseas dependents' schools of Department of Defense

Subsection (a) of section 903 of the bill would amend section 1008 of the National Defense Education Act of 1958 to provide for the allotment of funds to the Trust Territory of the Pacific Islands (in addition to the other outlying areas now referred to in section 1008) under section 302 of title III and section 502 of title V–A of the NDEA. In addition, the subsection provides that from the amount reserved under sections 302 and 502 of the NDEA the Commissioner shall allot such sums as may be necessary to the Secretary of the Interior for elementary and secondary schools operated for Indian children by the Department of the Interior, and to the Secretary of Defense for overseas dependents' schools of the Department of Defense, to carry out the purposes of title III and title V–A in those schools. This would be in accordance with policy in other laws extending aid to these areas.

Subsection (b) of section 903 would amend section 302(a)(1), 302(b), and 502(a) of the National Defense Education Act of 1958 to increase from 2 to 3 percent the maximum authorized to be reserved for outlying areas.

This amendment would take into consideration the inclusion in sections 302 and 502 of the Trust Territory of the Pacific Islands, the schools for overseas dependents of the Department of Defense, and the schools of the Department of Interior for Indian children. Also, this would be consistent with previous legislation extending aid under other programs to these same areas.

Subsection (c) of section 903 would make this section effective with respect to fiscal years ending after June 30, 1967.

TITLE X—AMENDMENTS TO HIGHER EDUCATION FACILITIES ACT OF 1963

Section 1001. Adjustment of interest rate on loans

Subsection (a) of section 1001 would amend subsection (b) of section 303 of the Higher Education Facilities Act of 1963 to provide that the interest rate on construction loans shall be not less than (1) a rate determined by the Secretary of the Treasury taking into consideration the current average market yield on comparable outstanding marketable obligations of the United States, (2) reduced by such rate, not in excess of 1 percentage point, as may be determined by the Commissioner. The rate under the existing law is 3 percent or one-quarter of 1 percentage point above the average annual rate on all interest-bearing obligations of the United States, whichever is less.

The purpose would be to follow the current Government-wide policy to make rate of interest on Government loans equal to the rate of interest due on Government obligations.

Subsection (b) of section 1001 provides that this section applies to loans approved, or for which a commitment is made, on or after the date of enactment of this bill.

Section 1002. Extending authorization for higher education facilities construction assistance in major disaster areas

This section would amend section 408 of the Higher Education Facilities Act of 1963 to extend through the fiscal year ending July 1, 1972, the availability of assistance to institutions in areas which have suffered a "major disaster."

Senator MORSE. I want to say that I can't end giving our sincere thanks to people that have helped me and the subcommittee in the preparation for this conference. But, particularly, I want to mention at this point, Vice Chancellor James Sherburne and Dr. Thomas Dahle who have worked very closely with the committee in connection with these arrangements. Without their assistance here at the homefront, while we were preparing back in Washington for the conference, we wouldn't have the arrangements that we are all having the benefit of this morning.

In submitting this opening statement, I want the record to show that I submit it, not in my behalf alone as chairman of the subcommittee, but with the approval of the entire subcommittee. We have had considerable discussion among ourselves as to the laying of the format for this conference, which will be carried on as a continuing format for conferences to follow.

First, let me say that I am very glad to welcome all of you today and I am glad to have the benefit of your deliberations and participation in accomplishing a double function here today.

BACKGROUND OF PROPOSAL

Second, it is my pleasure to express my appreciation to Dr. Ralph W. Tyler, chairman of the National Commission for Cooperative Education, for giving the cooperation that enables us to hold this statewide conference on work-study cooperative education.

The plan of a student alternating periods in school with full-time jobs in industry, business, and government has been adopted to improve the educational programs for many institutions of higher education in this country. It holds particular promise for the next few years when higher education must educate more young people than at any previous time and for more diverse professions and occupations.

I will digress only for a moment to point out testimony before our subcommittee, that by the year 1985, which isn't very long away, if we are going to answer the knocks on the doors of the institutions of higher learning in this country, from qualified students, and by that, I mean students capable of doing satisfactory college work, the testimoney indicates that we probably would have to double the size of all the institutions of learning in this country, higher institutions, public and private, and add a thousand new ones with the student population of at least 2,000 students per institution. That's why the testimony goes on to point out that this great growth in the community and vocational institutes is going forward at leaps and bounds, because you are going to have to bring the education closer to the students in their home community. We are going to have to face up with that quantitative load and see to it that we provide the educational quality that makes it possible to carry out the obligations.

The speed of change imposes a continuous strain on education that can be met only in part by merely appropriating larger sums of money. A real problem faces our higher institutions to accomplish the task of educating not for the needs of last year, nor even for this year, but for the needs of the future of which we may have little realization today. One of the important ways that the need can be met is by edu-

cators forming continuing links with the outside society so that students can be offered educationally related jobs that give them an experimental education as well as an academic education.

For it is true, as Alfred North Whitehead said in his study of "The Aims of Education," that:

> For successful education, there must always be a certain freshness in the knowledge dealt with. It must either be new in itself or it must be invested with some novelty of application to the new world of new times. Knowledge does not keep any better than fish. You may be dealing with knowledge of the old species, with some old truth; but somehow or other it must come to the students, as it were, just drawn out of the sea and with the freshness of its immediate importance.

HOW PROGRAM NOW OPERATES

The establishment of cooperative education programs gives students the opportunity to have educationally valuable experiences in full-time jobs in business, industry, and government and can greatly contribute to improving the educational excellence of programs offered by colleges and universities.

Established 60 years ago, there are now 110 colleges and universities with cooperative education programs. These institutions are arranging for students to alternate campus study with employment in full-time, responsible educative jobs. The college has, in effect, two student bodies. The college can admit and graduate more students without expanding facilities. There are now over 56,000 college and university students in these programs. These students are earning more than $95 million toward the cost of their higher education this year.

When that figure was presented to me and documented, I was greatly surprised. I had no idea that the program had reached that point of extension already.

Dr. Ralph W. Tyler, who was also chairman of the Ford Foundation supported 2-year research study on cooperative education, has stated its findings as being that:

> Cooperative education gives a student an education qualitatively superior in some respects to a conventional college education. Cooperative students become more mature and their records in graduate school and in employment show that cooperative education is a first-rate education.

VALUE TO STUDENT

I was particularly interested in one of Dr. Tyler's research findings that revealed that a higher percent of students in cooperative education programs went on to do graduate work than did students who were the product of the traditional college and university programs.

In President Johnson's message on education and health in America, delivered to the Congress of the United States on February 28, 1967, the President stated:

Before I read the excerpt from his message, I want to say I have talked to the President at some length about this program along with my discussions with him of all the other phases and facets of our proposed education legislation. And, I want to leave no room for doubt, as far as the President's viewpoint. This language I am about to read will indicate he is an enthusiastic supporter of the program that we have met to consider today. He recognizes the sound-

ness, and we can count upon him at the legislative front, if we come forward with legislation that will stand up, as I am sure we will.

ADMINISTRATION POSITION

The President in his message, said this:

> Three out of ten students in America drop out before completing high school. Only two out of ten of our Nation's young men and women receive college degrees.
>
> Too few of these young people get the training and guidance they need to find good jobs . . .
>
> A number of our colleges have highly successful programs of cooperative education which permits students to vary periods of study with periods of employment. This is an important educational innovation that has demonstrated its effectiveness. It should be applied more widely in our schools and universities.
>
> I recommend an amendment of the College Work-Study Program which will for the first time permit us to support cooperative education projects.

I need not tell you with that type of strong endorsement from the President, I think we are in a very good position to offer and receive approval by Congress of the type of legislation that we may need as we develop this program.

We shall have the opportunity today to have the benefit of your judgment and experience. We want to have your opinion on what should be done to improve the Higher Education Act of 1965 in regard to work-study cooperative education.

Work-study cooperative education is so named because it is dependent upon the cooperation of employers and educators in combining to form a superior total education program for the students. This program has an interrelated work and study content, carefully planned and supervised to produce optimum educational results for each student involved.

BASIS OF SYSTEM

This system of education is based on two observations regarding students in the United States.

1. Every profession for which students are preparing contains certain knowledge elements that cannot be taught in the classroom. These elements can only be learned by students through direct, on-the-job experience, working with professionals who are already in the field. In some advanced professions, this requirement is met by the intern principle.

2. Most of the students in this country must find employment on a part-time basis while they are in school and during their vacation periods, in order to earn part of the cost of their education. In almost all cases, jobs have no relation to ultimate career aims, and therefore, do not contribute substantially to the educational program of the students.

DUAL PURPOSES

Work-study cooperative education, on the other hand, satisfies the dual desire of providing income-producing jobs that at the same time extend and amplify the learning process of students. Under a cooperative program, the educational institution designs an academic calendar

which allows the insertion of work periods at appropriate intervals in the curriculum. The institution assumes the responsibility for finding positions which are related to the students' professional objectives and which thus provide work experience that enhances knowledge associated with educational aims. These jobs are regular-paying positions, producing income by which students can finance their education.

One of the important byproducts of a system of work-study cooperative education is that students who are economically or culturally or educationally disadvantaged—and many young people have these disadvantages—such young people are placed in jobs in private industry and discover meaning and motivation for their schoolwork. These students find in the college with a co-op program an instrument that can secure for them meaningful educationally related jobs that put an end to being disadvantaged. The cooperative program enables disadvantaged youth to learn about the real changes in opportunities for employment for them.

AID FOR LOW INCOME STUDENT

Does cooperative education attract students from lower socioeconomic groups, where families do not have a tradition of going to college? Dr. Tyler's study shows that it does. About one-third of the students and graduates from cooperative education programs come from the lowest socioeconomic third of the population, contrasted with one-fifth of the students and graduates of traditional colleges who come from this disadvantaged background.

Why does cooperative education attract these students? Partly because they and their parents can see more sense in this kind of education and partly because they can earn more of their way through college. In the one-half of each year that the student spends in his job period the average earnings are $1,900 a year toward the cost of his or her education. If the student is in the third or fourth year of an engineering or science program his earnings will be over $2,500 a year—while a student in liberal arts co-op program will, of course not usually do this well in earned income.

But cooperative education has also proved its worth for students who do not need to rely on the earning potential of the program. Two-thirds of the students in cooperative education programs come from middle-class families, with a minority from upper class income backgrounds who prefer the advantage of an education that includes real experience in the adult world.

EDUCATIONAL MERITS

Colleges adopt cooperative education primarily for the educational merits of the program, not for the additional money income the student can receive. It is true, however, that colleges with a program of cooperative education are able to make maximum use of their physical facilities—for they have two student bodies—one on campus and one off campus doing educationally related jobs—and these two groups exchange places at regular intervals.

Students in cooperative programs constitute an excellent source of manpower for semiskilled and subprofessional work. In most indus-

trial and business communities there are many jobs that fall within this category; they are normally above the capabilities of a high school graduate and yet beneath the interest of the fully trained college or junior college graduate. These positions are important from the employer's point of view. He wants them adequately filled and he wants to avoid the cost and inconvenience of excessive turnover. Cooperative students serve his needs to perfection. Both student motivation and the supervisory participation of his college practically assures the continuity sought by the employer. Furthermore, students placed in such jobs bring to them enthusiasm, interest, and a higher-than-normal level of ability. Adequate sources of such an intermediate work force are often a major factor in the decision for an employer to locate in a given area or to expand his business, once established; and some communities have used this source of manpower as an inducement to attract new industries.

VALUE TO EMPLOYER

Work-study cooperative education programs also have the value to employers of contributing to the recruitment and retention of gifted employees, as well as retaining them in their own communities. Employers in the community find that the cooperative program helps maintain a flow of trained personnel and personnel-in-training into their organizations. The program serves to attract promising young people into diverse occupational areas. Employers can use the system as an actual testing ground to identify and select persons with needed abilities and talents. During the work periods the employer can study the aptitudes of the student within the actual environment of his own organization, using his own superiority personnel to observe and assess. This yields the basis for sound judgment about the student's long-range potential as a permanent employee. Experience indicates that approximately 50 percent of the students exposed to this process will remain with their employers after graduation.

PROGRAM AID TO SMALL COLLEGE

U.S. Commissioner of Education Harold Howe II stated last July 12, 1966, that:

> This year, almost half of our college students are studying in institutions having an enrollment of less than 2,500. More than 1,700 of the 2,200 institutions of higher education fall into this category.

I believe that it is important to improve the educational services rendered by these institutions and I believe that establishing programs of work-study cooperative education can assist us all in accomplishing what we want to do—make education more effective and more relevant to the needs of our young people. I believe that this approach can assist us in solving the manpower shortages of teachers, nurses, medical technicians, engineers, tool designers, and others that we need because of the demand for advanced skills.

To accomplish this and to assist colleges and universities in establishing these new programs, other Senators have joined with me in introducing an amendment that will enable the U.S. Commissioner of

Education to make grants to colleges and universities to establish and expand work-study cooperative education programs, which we believe is in accordance with President Johnson's recommendation to which I have previously referred.

CONCLUSION

We all know that Americans have faith in education. But faith is not enough. We need innovations to adjust educational structure to the needs of a new time. We can no longer be satisfied to educate the top group and flunk the rest. Any corporation that threw away half its raw material every year would be bankrupt. Any educational system that does not adequately provide for all of our young people—including the lesser half in talent and brains—will fail us as well as them. The poor, the embittered, the alienated, will cost our society more than it would cost to educate effectively these people now.

We need courage and bold thinking. We need programs that feed back to the society multiple values which will repay the effort many times over. We need people like you to explain the potentiality of education over and over to our fellow citizens. And we should do this with vigor and zeal because in many ways education is the most important and the most interesting problem facing the Nation today.

I have made this opening statement in behalf of the entire committee because the committee felt that we ought to make this statement. It was the format, at least of the objective of the program as we understand the program. It is up to you now who are really the experts in the field to advise the committee and help make the record that will give us the support that we are going to need when we go to the floor of the Senate to ask for favorable action on the amendment that I have already referred to. And I am going to ask counsel to insert at this point in the record the text of the amendment.

(The text of the amendment referred to above follows:)

A portion of S. 1126, a bill to amend the Higher Education Act of 1965, the National Defense Education Act of 1958, the National Vocational Student Loan Insurance Act of 1965, and the Higher Education Facilities Act of 1963:

Providing for Institutional Expenses of Administration of Cooperative Education Demonstration Programs.

Sec. 436. (a) Section 125 and 126 of the Economic Opportunity Act of 1964 are redesignated as section 126 and 127, respectively, and the following new section is inserted immediately following section 124:

"Use of Work-Study for Administrative Expenses of Cooperative Education Programs

"Sec. 125. (a) An agreement entered into pursuant to section 124 may also include provisions authorizing the institution, to the extent and under terms and conditions prescribed by the Commissioner by or pursuant to regulation, to use, out of the sums granted to it under section 123, a portion for its administrative expenses (which for this purpose may, among other expenses, include expenses of counseling and guidance, placement, and consulting services) in developing or carrying out a program, described in such agreement, to demonstrate or explore the feasibility or value of methods of cooperative education involving alternate periods of full-time academic study at the institution and periods of full-time public-private employment (whether or not afforded by an organization described in section 124(a) approved or arranged for by the institution under such program. The Commissioner may, if in his judgment it would promote efficiency and economy to do so, prescribe regulations applicable both to administrative expenses for which an institution may use work-study funds under this section and to adminisrative expenses for which it may use such funds under section 125(b) and to the determination of the amounts allowable for such ex-

penses from such funds, and such regulations shall, to the extent (if any) provided thereon, supersede with respect to administrative expenses referred to in section 125(b) the limitations specified therein.

"(b) The question of the authority of the institution to use funds obtained under section 123 to pay for particular work performed by a student under a cooperative education program covered under this section by an agreement with the Commissioner shall be determined solely by reference to the provisison included in the agreement pursuant to section 124."

(b) Section 124 (b) of such Act is amended by inserting "except as otherwise provided under section 125," before "provide."

Senator MORSE. It is now my pleasure to call upon Dr. Flemming for a statement in regard to the program that we have met to consider. And, I do it, may I say again, knowing that as I do it, I am introducing to this group, and to the record of these hearings, one of our outstanding educational statesmen in the country. Dr. Flemming.

STATEMENT OF ARTHUR S. FLEMMING, PRESIDENT, UNIVERSITY OF OREGON

President FLEMMING. Thank you very much, Senator Morse. Senator Morse, I am tempted to just reminisce for a couple of minutes. As I have listened to you make this presentation, and I consider the significance of this particular event, I recall that soon after I was sworn in as Director of the Defense Mobilization, I appeared before the Senate Banking and Currency Committee, of which you were then a member; and you were presiding at a hearing, and we were dealing with some rather controversial matters.

As I recall the hearings extended throughout the day. Late that afternoon, I went over to the Washington National Airport to return to Ohio, I ran into a Member of the Senate from Ohio, not the late Senator Taft, but a Member of the Senate who did not share all of your views on some of the issues then pending. He invited me to have dinner. And, as we were leaving, we passed by a table at which you were sitting, and you were kind enough to look up and indicate that you thought that I had made a good presentation. As we left your table, the Senator said to me, "What did he mean by saying that you made a good presentation?" [Laughter.]

Senator MORSE. I want to say, President Flemming, I just returned from Ohio, where I spoke at a convocation of the great institution of which you were president for many years. I was going to say to you privately, but I want to say it publicly, because the public is entitled to know the great praise that was given to you for the great educational job that you did in Ohio. It was a great honor for me to be at the platform of the chapel from which I knew you had spoken so many times to the students of that generation of that great institution. I found there a great many friends of mine in Ohio. [Laughter.]

President FLEMMING. I am sure that is true.

Senator MORSE. I am going to say the two Senators from Ohio, although one of them doesn't agree with me on a good many things, are very close to me. In fact, I am going to take just a minute, if I may, to say that Senator Lausche and I, for a long time, didn't agree on education legislation. For a while, he was not an enthusiastic supporter of the Morse amendment for scholarships and fellowships. Now, he is one of the most ardent supporters of the program. And, as an old teacher,

you would be surprised to know how repetition in the learning process is. [Laughter.]

President FLEMMING. Well, I always say it indicates we can still have faith in the possibility of conversion.

TRIBUTE TO THE CHAIRMAN

I do appreciate very much having the opportunity of appearing at this hearing on that portion of S. 1126 relating to the cooperative work-study amendment. I feel that all of us who are here this morning are deeply indebted to the distinguished chairman of the Subcommittee on Education of the Senate on Labor and Public Welfare for arranging to hold these hearings in Eugene. Mr. Chairman, I would like to say again, the University of Oregon will always think of you as a member of our educational community. We will never forget the significant contribution you made, both as a teacher and as an administrator; and, we are always delighted to welcome you back to our educational community.

In addition, Mr. Chairman, I know I am speaking as a representative, not only of the University of Oregon, but also of the larger educational community, when I express to you our deepest appreciation for the imaginative and effective leadership which you have provided the Congress in the entire field of education. This leadership, for example, has made it possible for our institutions of higher learning to launch new programs, to extend even old programs, and to open up doors of opportunities for tens of thousands of persons who otherwise would have found those doors shut. Your leadership, interest, and support, has meant a great deal to the University of Oregon, to use one illustration, as we have become involved in the programs of the Office of Economic Opportunity at Tongue Point and on the campus. We hope this involvement has resulted in our making a contribution to the economic opportunity program. We know that it is resulting in the strengthening of our teacher and counseling training programs. And, we do appreciate your help and assistance.

Also, I would like to express my own personal appreciation to you for your leadership in insisting that in spite of higher rate of expenditure in the area of defenses, our Nation can afford to support Federal programs in the field of education. And, I appreciate, as I know you do, that we are at a critical point as far as obtaining support for these programs are concerned.

And, I want you to know that at the University of Oregon, and I am sure throughout, not only our State, but throughout the Nation, that educators appreciate your insistence on the fact that we can afford expenditures for education. And, we will certainly do everything we can to rally support for this position at this very critical point.

It is one thing to get legislation passed; it's another thing to persuade the Congress to provide the funds that are needed in order to implement that legislation.

You informed me this morning that a subcommittee of the House Committee on Appropriations has refused to vote in favor of a supplemental appropriation that would launch the program in international education for which you have provided such outstanding leadership.

It seems to me that the field of education, and those interested in the field of education should indicate in no uncertain terms the fact that they disagree with that kind of a position, and see what we can do to obtain a reversal. And, I know you will provide us with a kind of leadership that is needed. And, I hope that we can provide you with the kind of support that you need if you are to be successful.

Your interest in and support of cooperative education is certainly completely consistent with what you have stood for in the past as a member of the University of Oregon community and as a Member of the U.S. Senate. I am happy to lend my support to this proposal for involving the Federal Government in a meaningful manner in a partnership program with colleges and universities which has as its objective the broadening and strengthening of cooperative education.

ANTIOCH EXPERIENCE WITH COOPERATIVE WORK-STUDY

I had the opportunity, as you have indicated, of observing cooperative education at first hand at Antioch College while I was serving as president at Ohio Wesleyan University. I developed a very high regard for the program. I concluded that Antioch College was rendering a service to its students that could not be rendered as effectively in any other way.

I also had the opportunity in the executive branch of the Federal Government of serving with men and women who had the privilege of participating in the Antioch program. These associations confirmed my high observations relative to the contribution that this type of education makes to the lives of those who are involved in it.

Some of our finest career public servants are the products of cooperative education. As you may recall, I had the privilege of having associated with me as Secretary of Health, Education, and Welfare, one of the distingiushed graduates of Antioch College, a person who has served as a member of the board of trustees of that college. I refer to Rufus Miles, who served as the Assistant Career Secretary for Administration of the Department. He is just one illustration of what this type of program can do for persons who are looking forward to service in government as a career.

MANPOWER SHORTAGE IN COMMUNITY SERVICE AREA

At the University of Oregon, we are in the process of launching a new school of community service and public affairs. Personally, I believe that one of our Nation's most serious manpower shortages is in the area of community service occupation. We have had experience in the past few years of obtaining good legislation, of seeing funds appropriated to implement the legislation, and then finding it very difficult to obtain qualified personnel to implement that legislation effectively at the local level. At this same time, I believe that never before, certainly in my lifetime, have our undergraduate students been as strongly motivated in the area of service occupations as they are at the present time. We believe that we have an obligation, as a university, to build a bridge between this serious manpower need and the highly motivated undergraduate student. We believe that one of the most effective ways of building this bridge is to introduce into out total

program for this new school of community service and public affairs the concept of cooperative education. And, this, we plan to do. We believe that by doing so, that we will improve the education of those who have already decided on a vocational objective. I have in mind those who have already decided they do want to become involved in a community service occupation. But, we also believe that by introducing this concept of cooperative education, we are going to help many of our students to make a vocational choice. And, from my point of view, this is one of the most important aspects of cooperative education.

PEACE CORPS PARALLEL

I have had the privilege of serving as a member of the Advisory Committee of the Peace Corps. And, I have attended meetings from this Advisory Committee, and as I have listened to the testimony from men and women who have completed their 2 years of service with the Peace Corps, I have been struck by the fact that time and again, these persons have testified to the fact that as a result of their experiences, they have made a new vocational choice; that as a result, they have desired to return to educational institutions in order to prepare themselves for this new vocational choice. They have learned by doing the satisfaction that comes to persons who dedicate their lives to service occupations. I believe that we can be a tremendous help through cooperative education in providing our undergraduate students with the opportunity for learning experience which will indicate to them the satisfactions that can come from participating in service occupations.

INSTITUTIONAL FINANCIAL COMMITMENT TO PROGRAM

Now, we recognize that if cooperative education is to make a significant contribution to the attainment of our overall objective, as far as this new school of community service and public affairs is concerned, we must be willing as an institution to make a significant investment in the field aspects of this program.

We feel that we are fortunate in the fact that a graduate of the University of Oregon, Mrs. DeWitt Wallace, who is copublisher of Reader's Digest, has made a gift of a substantial portion, which will enable us to accelerate our total program. Some of this is going to be used in order to launch a cooperative educational program in connection with this new school of community service and public affairs. There is no question in my mind but that the enactment into law of these proposed amendments dealing with the field of cooperative education would be of significant assistance to the University of Oregon, not only in the area which I have singled out for attention, but in other areas. And, I am sure that what I have said about the University of Oregon can be said about every institution that is operating in the State of Oregon, as well as in the other States of this Nation.

STIMULATION OF INNOVATION

The enactment of these proposed amendments into law will provide another example of how the Federal Government, through the cate-

gorical approach, can provide the leadership that stimulates innovation and attracts additional resources to the field of education.

One of the things that I admire about your leadership is your willingness to use the categorical approach in order to get programs underway and in order to get them started.

CATEGORICAL APPROACH ADVANTAGES

As I know that you know, there have always been those who have opposed the categorical approach on the ground we might be creating an imbalance in the field of education. My theory has always been: Yes, we do create an imbalance; but having created the imbalance, we can then get support for counteracting the imbalance. That is the way in which we move forward. I think this is another excellent illustration. I am delighted personally that the proposed amendments authorize the Commissioner of Education to enter into direct negotiations with the colleges and the universities of the Nation. We do not need any intermediary between the Office of Education and the individual colleges or universities. In fact, I think we get our best results when we have that kind of a direct relationship. I certainly hope that the amendment will be approved at this session of the Congress so that the Federal Government can do for this very important area of cooperative education what I hope it is about to do for international education, again, as a result of your persuasive assistance and effective leadership, and what it has done for so many other areas of education in the last few years.

I am certainly appreciative personally for the kind of support that the President of the United States and that you and your colleagues on the subcommittee are giving to this significant aspect of our total educational program.

Thank you.

TRIBUTE TO SENATOR LISTER HILL, CHAIRMAN, SENATE COMMITTEE ON LABOR AND PUBLIC WELFARE

Senator MORSE. President Flemming, I appreciate very much the statements that you have made for this record. You have only borne out the soundness of the evaluation of your educational statesmanship that I announced in introducing you. I want to say I now transfer, however, to all the members of my subcommittee the accolades that you heaped upon the chairman of the subcommittee, because it's the entire committee that has done this work, both sides of the table, so to speak. And, without their dedication and conviction in the soundness of the program, we couldn't have accomplished what you have referred to.

May I also say that great, great credit is due to the chairman of the full committee, Lester Hill of Alabama. Although he is known in the Senate as Mr. Health because of the great work his Subcommittee on Health Legislation has done over the years, starting, of course, with the Hill-Burton Hospital Act. He is also a member of my Subcommittee on Education.

Let this record show, there has never been a single time when Senator Lister Hill, who serves on my subcommittee, hasn't given me complete support in going forward with the recommendations that our subcommittee has made to the full committee.

Just one other word, there are so many things about your statement, that if I were not chairman of this committee, I would be discussing, because of my complete agreement with what you are saying. But my job is to conduct the hearings, and not to take up time to make a record myself.

CATEGORICAL USE APPROACH BACKGROUND

I only want to make this passing reference to your comment about the categorical use approach. If we had not made the categorical use approach, and I can very well remember the date down in the White House when President Kennedy called the then Secretary of Health, Education, and Welfare, Abe Ribicoff, down to the White House with me to decide how we were going to get around the impasse, I had talked to the gentleman on my left before I went down. And, I never take credit for anything that is a joint enterprise. I want to say these two men, Jack Forsythe and Charles Lee and I had a session that I sometimes describe as a brainstorm session. I knew what the impasse was. And, I think I was the one who suggested that we had to find some way of getting in the back door or side door because you can't go through the front door, because we've got to provide the legislation that meets the educational need. That's where the idea was born. And, President Kennedy and Secretary Ribicoff joined with me, and we came forward with that series of proposals that resulted in the so-called categorical-use approach. We are going to have to continue it until the Supreme Court gives us a decision on the nose as to how far we can go, for example, on the first amendment—and until we get that decision, and I hope we can get it in not too many months or years, I hope in the very near future—until we get it, we are going to have to continue the categorical-use approach. Then, that part of the educational system that gets out of balance, we will bring it back in balance with the categorical-use approach to create the balance again.

To be very frank and open about it, I have said what I have said to this group on the floor of the Senate many times. It is the only way, in my judgment, we can meet the challenge of the educational crisis. And, I am so glad you mentioned it in your statement. It gives us reinforcement. And everybody on my committee, I am sure, is going to read it with great satisfaction.

TRIBUTE TO SENATOR LISTER HILL

Now, I will apologize, in that I am going to have to declare a recess.

President FLEMMING. Mr. Chairman, before you declare that recess, I wonder if I could simply express my enthusiastic concurrence with the statement that you made relative to Senator Hill. It was my privilege, of course, to appear before him many many time in connection, not only with educational legislation, but also health and welfare legislation. And, I am sure that it is impossible for anyone to express adequately, in words, the debt that this Nation owes Senator Hill. And likewise, I would like to subscribe wholeheartedly to your comment relative to the counsel for the committee, because no one can serve in the executive branch without developing a great appreciation for the kind of service that is rendered by Mr. Forsythe in this very very important area. Our system of government wouldn't work as well as it

does if it were not for the career civil servants on the Hill as well as the career civil servants in the executive branch.

Senator MORSE. I appreciate very much your making that statement. Senator Hill will appreciate it. All the members of my committee will appreciate it too.

One of the sparkplugs who kept the motors of this gathering turning smoothly during the preliminary phases of organization is my good friend, the very able vice chancellor of the Oregon State System of Higher Education, Dr. James W. Sherburne.

I am very pleased to call upon him for his opening statement.

Dr. SHERBURNE. Thank you, Senator Morse.

STATEMENT OF JAMES W. SHERBURNE, VICE CHANCELLOR FOR CONTINUING EDUCATION, OREGON STATE SYSTEM OF HIGHER EDUCATION

COOPERATIVE EDUCATION COMMENTS

The Division of Continuing Education of the Oregon State System of Higher Education is delighted to have had a part in the arrangements for this statewide conference on Cooperative Education. We welcome the leadership of the Education Subcommittee of the U.S. Senate Committee on Labor and Public Welfare under the chairmanship of Oregon's Senator Morse in exploring the merits of including provisions for the administrative costs of installation and initial operations of the cooperative education program from Federal funds.

More and more we are able to identify our era as a time of perpetually continuing education. What was once a remedial night school experience for foreign-born adults, has now become a built-in continuing learning process for adult preparation for growth in job, family, and citizenship. One cannot name an occupation for which there is no need for the kind of upgrading continuing study provides. Industry is constantly seeking methods of improving its work force through continuing education. In Oregon, for example, one company of 6,400 employees, Tektronix, held 178 classes during the fall and winter terms this year for 3,500 voluntary enrollees on its own premises. In addition, it supported off-premise studies of 900 employees through the company tuition refund plan.

These patterns of today, and even more the patterns of tomorrow, will have an individual spending part of his time at work and an increasing amount of time at study, either on the job or at an educational institution. Cooperative education will increase the opportunity for our young people to prepare themselves while in their undergraduate years for the dual work-study activities which will characterize their adult years. I believe that the changing nature of our society with its requirements for continuing education is one of the basic arguments for extending similar opportunities at the undergraduate years through cooperative work-study programs in our institutions of higher learning. I plan to encourage my colleagues in continuing education to join in support of this amendment to title IV of Public Law 89–329, the Morse-Green Higher Education Act of 1965.

Senator MORSE. Thank you, Dr. Sherburne.

I am sorry, it is going to be necessary for me to declare a 5- or 10-minute recess. Counsel tells me coffee is available. I just received an emergency call. There is an emergency meeting at the White House in the railroad crisis. Secretary Wirtz is trying to reach me. I must go and take that call. We will recess for 10 minutes.

(Whereupon a recess occurred, after which the following proceedings took place:)

INTRODUCTION OF PANEL

Senator MORSE. The hearing will come to order. We are privileged next in our hearing program to hear a panel consisting of Dr. Ralph W. Tyler, chairman of the National Commission for Cooperative Education and director of the Center for the Advanced Study of the Behavioral Sciences at Stanford University; Dr. J. Dudley Dawson, vice president and dean of students at Antioch College, Yellow Spings, Ohio; Dean Donald C. Roush, College of Education, New Mexico State University, University Park, N. Mex.; and, Mr. James Godfrey, Lockheed Missiles & Space Co. Sunnyvale, Calif.

Gentlemen, if you will take the panel seats to my right, you may proceed in your own way.

I want to say, in behalf of my committee that you are witnessing in this hearing the same format under which we conduct most of the hearings before my subcommittee. I ran a seminar, and I have found that this format is more beneficial from the standpoint of the record that these panels make when I get to the floor of the Senate to put legislation through than any other system of testifying that I have seen developed before any committee in my years there.

I think it is particularly applicable in the consideration of educational legislation. But, the important thing is if you are managing a bill, that you and the members of your committee are in a position when questions are raised and debated, you turn to the printed record, and your witnesses answer the questions for you. You don't have to answer them as a Senator. And that happens, may I say, at least 85 to 90 percent of the time. Some question is asked me, and I will say well, let me read you what an expert on the subject said. And, that testimony comes out of this panel approach. And, what we do as Senators, we sit there as students of the panel. They conduct their own discussions in their own way. And we, from time to time, may interrupt with questions. At the end of their discussion, they are then open to questions.

It is that format, gentlemen, I want you to follow this morning. I am glad to see Dr. Probst with you. Most of you know Dr. Probst. He worked in this field as a close adviser of our committee in regard to cooperative education problems. I am glad that he is going to participate with you.

Dr. Tyler, the seminar is yours. Proceed in your own way.

Dr. PROBST. Thank you, Senator Morse. On behalf of our panel and our group, I want to express our gratitude to you, Chancellor Lieuallen, and President Flemming for the opportunity to be here and talk about cooperative education work-study. And I think the most efficient procedure would be at this point to introduce Dr. Tyler, who is chairman of the Board of Trustees of the National Commission for Cooperative Education, which is an agency that was formed 5 years ago

and contains on its board the presidents of eight colleges and universities and business leaders who are interested in and believe this form of innovation in higher education can be very advantageous for many students and for many institutions.

INTRODUCTION OF DR. TYLER

Dr. Tyler was chairman of the study on cooperative education, which was supported by a $100,000 grant from the Ford Foundation in 1958 to 1960. This committee served under his leadership and established certain results which led on into the recommendation that it all be expanded, which is the reason for the existence of the national commission.

Dr. Tyler is a distinguished expert in research in the field of education. He has more positions of leadership than I can list. He served as dean of the Social Science Department of the University of Chicago for a number of years and chairman of the department of education. Then he became director of the Center for the Advanced Study of the Behavioral Sciences at Stanford.

Out of this background, I think, one is able to expect and receive one of the most prudent judgments in the field of education that I have ever encountered. Dr. Tyler.

Senator MORSE. Doctor, we are glad to hear you present your seminar as you go along.

STATEMENT OF DR. RALPH W. TYLER, CHAIRMAN, NATIONAL COMMISSION FOR COOPERATIVE EDUCATION, AND DIRECTOR, CENTER FOR THE ADVANCED STUDY OF THE BEHAVIORAL SCIENCES, PALO ALTO, CALIF.

Dr. TYLER. Senator Morse, this type of generous introduction reminds me of the time that a physicist was testifying before a Senate committee on the use of atomic power. The counsel for the committee asked him his occupation and he said, "I'm a physicist." Counsel, who had been reading a great deal about physicists and wanted to impress the other members of the committee, said: "Who is the world's greatest physicist?" expecting him to give one of the winners of the Nobel Prize. He said, "I am." When he got back to John Hopkins, his friends were kidding him. He said, "I know it sounded egotistical. But I had to tell the truth. I was under oath." [Laughter.]

Senator MORSE. You are not under oath this morning.

Dr. TYLER. Your very comprehensive introduction to this hearing, combined with the fine careful statement which President Flemming has given, has included much of what we had learned in connection with our study. And you may find some repetition, but I hope you won't mind it, both in saving of time and being accurate, if I read the position that I wish to take.

ROLES OF HIGHER EDUCATION

Higher education today faces not only the heavy burden arising from the greatly increased youth population but it is also called upon

to reach a much larger proportion of our youth. As automation has sharply reduced the employment of people in unskilled and semiskilled occupations, the fields in which there is increasing demand are those requiring a fairly high level of education. These are in engineering, science, the health services, education, the social services, the recreational fields, accounting, and administration. Hence, to provide employment opportunities for all our people and to keep our economy fully productive require a much larger proportion of our youth to complete high school and many more than in the past to gain professional, semiprofessional, or technical competence. To provide these educational opportunities and to insure effective learning for youth from varied backgrounds of training, experience, and outlook is a new and important task which our colleges and universities now face. Neither we nor any other country has previously attempted it.

Another difficult job for colleges today is to aid the student to find the connection between what he is learning in the classroom and the situations he encounters in life outside. On the one hand, science and the arts are increasingly abstract and generalized in order succintly to communicate the knowledge the scientists and scholars are acquiring. Available knowledge is now doubling every 10 to 15 years.

On the other hand it is increasingly difficult for youth to get sufficiently involved in the adult world to appreciate firsthand the way in which knowledge can help him to understand and to operate effectively in complex modern life. As this gulf between knowledge and the experience of the college student widens he fails to see the relevance to his own life of what he is being taught in college. Some lose their motivation to learn and drop out, others become alienated and join activist movements that emphasize disengagement or seek to redirect and control the college program.

COOPERATIVE EDUCATION AS MOTIVATING FORCE

Cooperative education is a powerful and constructive means for aiding many young people to obtain a college education who come from various backgrounds and it also furnishes an important source of motivation for learning and a way of gaining greater educational values from college work.

After making this sweeping statement, I want to present the evidence on which it is based. Cooperative education, as most of you know, gives students the opportunity to have educationally valuable experience in full-time jobs in business, industry, government, and the professions while enrolled in college or university. Established 60 years ago, there are now 100 colleges and universities with cooperative education programs. Many of these institutions are arranging for students to alternate campus study with employment in full-time responsible educative jobs.

The college has, in effect, two student bodies. The colleges can admit and graduate more students without expanding facilities. There are now over 50,000 college and university students in these programs. As Senator Morse has pointed out, they are earning more than $90 million toward the cost of their higher education this year.

EDUCATIONAL VALUES—WILSON STUDY

Cooperative education programs had been in operation in this country more than 50 years before a systematic investigation was made of its educational values. In 1958, with support from the Fund for the Advancement of Education, the Edison Foundation named a committee, of which I was chairman, to undertake such an investigation. The committee selected Dr. James W. Wilson as executive director of the 2-year study and Edward H. Lyon as associate director.

The research undertaken sought to appraise major aspects of cooperative education and to compare students and graduates in cooperative programs with those whose education did not include a systematic coordination of work and study experience. The investigation was planned and conducted by the study staff with the counsel, criticism, and encouragement of the study committee. The study committee members were active participants in the work, as the research design was formed with their advice and modified by their comments. Each step of the findings was submitted to them for evaluation and comment and discussed at seven meetings, lasting 2 days each, through the spring of 1960.

The investigation and the report were completed in 18 months, which time schedule kept the staff under continuous pressure. Nonetheless, at each meeting of the committee, plans were criticized, progress was reviewed, and the staff provided each committee member with a complete set of data. As the results of the study reached the committee and as we reflected upon them and discussed them, we reached certain conclusions and formulated certain recommendations about cooperative education.

STUDY FINDINGS

From the experiences of students and from the testimony of faculty members and graduates, we conclude that cooperative education provides important educational values in the following respects:

1. By coordinating work experience with the campus educational program, theory and practice are more closely related, and students find greater meaning in their studies.

STUDENT MOTIVATION

2. This coordinating of work and study increases student motivation. (As students see connections between the jobs they hold and the things they are learning on the campus, they become more interested in academic work.)

3. For many students work experience contributes to a greater sense of responsibility for their own efforts, greater dependence upon their own judgments, and a corresponding development of maturity.

DEVELOPMENT OF RELATIONSHIPS

4. Because the work experiences involve the students in relations with coworkers who come from a variety of backgrounds, and because success in these jobs requires constructive relationships with colleagues, most students in cooperative education develop greater under-

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standing of other people and greater skills in human relations. Particularly important in this connection is the value obtained from the contacts made with adults in a variety of situations, thus helping to break down the segregation of college students into a wholly adolescent community.

ORIENTATION OF STUDENT TO FIELD OF WORK

5. Cooperative education helps markedly to orient college students to the world of work. Most college students are greatly concerned about their future life work. They want to know more about the range of occupations available to them and the potentials and limitations of these fields. They want to know about the qualifications demanded and their own fitness for them. Cooperative education furnishes students with opportunities for exploring their own abilities in connection with real jobs, and they find a direct means of gaining vocational information and vocational guidance not only in the occupations in which they are employed but in a number of related fields as well. They have a chance to test their own aptitudes more than is normally possible on the campus. Furthermore, in many programs of cooperative education, students are enabled to understand the meaning of work to the individual and the function of occupation in providing the wide range of goods and services characteristic of our economy.

6. From the standpoint of the Nation, with its increasing need for well-educated people in science, engineering, business and the professions, as well as from the standpoint of individual self-realization, cooperative education has an important value in making higher education possible and attractive to many young people who would not otherwise go to college.

VALUE FOR LOW INCOME STUDENT

Senator Morse commented on the figures that we found as we worked through the data we got from these many colleges, approximately 35 percent of the student bodies of cooperative programs came from the lowest third of the economic income level, whereas only about 20 percent do so generally. So, a considerably larger number of young people who would not otherwise go on to college were able to do so. Many students' on-the-job earnings have made their college education financially possible. The assurance of having a job while in college makes cooperative education seem practical to young people and their families who have had no previous connections with colleges and are skeptical of the values of book-learning" and of their own potential for college work.

CURRICULUM PLANNING

7. As work programs are planned and developed and as the students rotate from college to work and back to college again, the faculty is better able to keep in touch with business, industry and some of the professions. In many of the colleges information gained through these contacts is used in planning the curriculum and in teaching, thus contributing greater educational vitality.

EFFECTIVE UTILIZATION OF PLANT AND FACILITIES

8. Because cooperative education is commonly organized so that half the students are at work while the other half are on the campus, the plan permits more efficient utilization of the college plant and other facilities. Many colleges use their facilities little if at all during the summer. In most cooperative programs the plant is used throughout the year. This arrangement also makes it possible to graduate more students than the conventional program using the same facilities. We found that from 14 to 60 percent more students can be graduated, the exact percentage depending upon the rotation plan, the number of years during the student's career when he is involved in a work-study plan, and the number of years the program has been in operation.

In addition to these eight clear-cut educational values, the committee noted evidence and testimony supporting several other advantages which are possible through cooperative education. A number of business and industrial firms find the cooperative program a means of maintaining of flow of trained personnel. It often provides a means for attracting promising young people into the occupation and serves as an actual testing ground so that employers are able to identify and select more readily persons with needed abilities and talents. For the student, cooperative education furnishes contacts useful in later occupational placement, and for many it gives a head start in salary, and position as they graduate from college and go into fulltime employment.

VALUE TO MARRIED STUDENT

For most married women, the work experience is greatly valued because through it they develop initial skills in an occupational area and have greater confidence that they can return to productive employment after their children no longer need a great deal of their attention. Finally, we noted that a number of the colleges found cooperative education providing greater recognition by the community of the services that colleges are rendering to it and thus furnishing an additional basis for moral and financial support to the colleges from the community.

EVALUATION OF FEARED DISADVANTAGES

As the committee examined the results of the study and found these values in cooperative education we were also concerned with possible disadvantages. We collected from many sources, the claims that had been made about the disadvantages to see how real they were. Contrary to the objections sometimes made, most of the students and faculty reported no problem was encountered as students shifted from college to work and back again. There is not a great deal of confusion or lost motion in this rotation. Most students did not find that they were forgetting their academic work while on the job but were continuing to use spare time in study as well as in social and cultural activities while they were full-time on the job. Interestingly enough, the great majority of the faculty did not find that cooperative students were any less creative or imaginative nor any more "reality bound" than students in conventional college programs. Furthermore, the cooperative students participated in extracurricular activities to about

the same extent as students in other programs. In these respects, cooperative education does not have the disadvantages sometimes feared.

In most of the cooperative programs, the student spends an extra year in completing his undergraduate education. In some, where the work experience is concentrated each year into the winter term, or the summer term, the course is no longer than the conventional one. To some students, the added year is a disadvantage, but for those who without the opportunity for cooperative work could not have gone to college at all or would have had to work long enough to save up the money to cover part of their college expenses, this is not an added year. The data obtained from the graduates indicate that the cooperative students have not been slowed down in their occupational careers, because they are employed on graduation at a level as high as or superior to students in the same occupation who graduated and entered full-time employment a year or more earlier.

CAREFUL PLANNING NEEDED

Cooperative education programs require careful planning and appropriate staffing or they will fail to attain many of their potential values. The colleges must provide coordinators to work with employers and with students on the job. The costs of coordination are usually as great as the savings involved in the fact that each student is on the campus only half a year. So, the colleges cannot anticipate this as being a cheaper form of education because it demands adequate cooperation. Really, you see, the work experience is the laboratory for the students and requires the same kind of consideration by the college as supervision of any other kind of laboratory experience. Furthermore, additional faculty members are needed in programs which run 12 months a year so that every teacher has some time for his own study and vacation.

A work-study program may seem a disadvantage to the employing firm unless provision is made for coordination by the employer as well as the college. Work experience to serve educational purposes and to provide trained personnel for business and industry must involve appropriate movement from job to job within the company to furnish the range and sequence of experiences that are necessary to continued learning rather than just getting into the habit of doing the same thing day after day. Cooperative education is not a cheap means of getting trained men and women but it can be a highly effective one.

NO REAL DISADVANTAGES FOUND

Our review of these possible disadvantages led us to conclude that none of them is real when adequate coordination is provided both by the college and the employers and when the employers provide necessary stability to the employment opportunities for students. The values of cooperative education are very significant and the problems are soluble.

The most effective programs of cooperative education appear to be those which have been carefully worked out by each college in terms of its purposes, resources and kinds of students served and in cooperation with employers. The types of work experience, the methods of

coordination, the time rotation involved and other features are planned to maximize the values that the program can provide in the local situation. When cooperative education is treated as a method for relating theory to practice in education, and when flexible arrangements and varied procedures are evolved rather than a rigid set of operations, the resulting program is more likely to become a successful one.

Some of the programs suffer from lack of understanding on the part of many members of the faculty. Usually in these cases the plans were worked out some years ago and the current faculty has not been directly involved in the program development. Often, the new faculty members do not take advantage of the opportunity provided for tying together the student's work experiences and his studies. In initiating a plan of cooperative education the faculty should be intimately involved in planning, particularly as it relates to their own teaching, and then after the program is established there should be continuous or periodic participation by the faculty in planning and coordination so that they will have a more adequate understanding of its potential and problems and be able to use the program more effectively in their own field.

SUPPORT OF INDUSTRY EMPLOYERS ESSENTIAL

The more effective programs appear to have gained the understanding and support of the employers involved and are treated as an integral part of the company's personnel program. Primary attention should be given to a close and responsible relationship between the employer and the college in the planning of work experiences, in the selection of students qualified to undertake the job assignments, and in the maintenance of a relatively stable level of cooperative employment through the fluctuations of the business cycle. This responsible relationship also helps in dealing with individual problems as they arise since the college coordinator and the coordinator in the employing organization are both familiar with the purpose and plan of the program, and can help out in any particular case of the youngster in difficulty.

We noted that some colleges are using the cooperative plan to increase their effiiciency in use of resources, particularly the plant and facilities, while in other colleges little attention was given to this problem. All colleges, we recommend, carrying on cooperative education should give attention to the ways in which the program can be arranged to use facilities more efficiently because they are increasingly in high demand and short supply.

NEED FOR EXTENSION OF PROGRAM

In the light of the tremendous needs in the decades ahead for a much larger number of well-educated people in science, technology, business, and the professions, a program which increases motivation, helps the student to find more meaning in his school studies, attracts more able young people into higher education and enables more of them to go to college should be extended far beyond the relatively small number of colleges now using cooperative education. We need to extend cooperative education much more widely and to extend it into areas where there are few or no present programs in cooperative education.

Teaching, social work, and the civil service are three occupations in which there are serious shortages of trained personnel. It seems likely that cooperative programs specifically designed to meet the peculiar needs of each profession would attract additional students and help to improve their educational experience.

There are only a few liberal arts colleges employing cooperative education. Most of the cooperative programs are in schools educating for special occupations like engineering, business, and so on. The findings of this study indicate both the values and the feasibility of cooperative education in colleges of liberal arts, of which Antioch is an outstanding illustration.

Cooperative programs for men are much more common than for women and yet the findings of this study indicate the values of such programs for women in career exploration, in developing self-confidence, in maturing judgment and in developing greater independence. More experimentation with cooperative programs in the education of women is needed.

In summary, Mr. Chairman, higher education faces new and difficult tasks. Imaginative innovations are required to meet the responsibilities we face. Cooperative education is one of these innovations that can help many young people gain a college education not otherwise possible for them and greatly increase the motivation and the results of college experience for most students. Thank you.

Senator MORSE. Thank you very much, Dr. Tyler. Dr. Probst.

INTRODUCTION OF DR. DAWSON

Dr. PROBST. Senator Morse, at this time I would like to introduce Dr. J. D. Dawson, whose professional field is mathematics, and who has for about 35 years, served positions of leadership at Antioch College where he is now vice president. Vice President Dawson.

Senator MORSE. Mr. President, you may proceed in your own way.

I want to say, Dr. Tyler, before you leave the room, I want to say to the panel that our procedure after the panel finishes, depending on whether we start before the noon recess or immediately after the noon recess, I am going to ask the panel to reassemble itself at the witness table. Then other members of the conference are free to ask the panel such questions as they care to, and make additional remarks on their part and make our record complete.

Dr. TYLER. I hope, Mr. Chairman, I hope you will forgive my leaving for a moment to go on the university's radio program.

Senator MORSE. Come back. Go ahead.

STATEMENT OF J. DUDLEY DAWSON, VICE PRESIDENT AND DEAN OF STUDENTS, ANTIOCH COLLEGE, YELLOW SPRINGS, OHIO

Dr. DAWSON. Mr. Chairman, I have been asked to describe to you cooperative education at Antioch College. Perhaps, I should say, first of all, that what you will hear, perhaps, is somewhat the culmination of a program which has been going on for 46 years, since 1921. We did have at Antioch, the good fortune in 1921, to have a complete rebirth of the program. This had a great deal to do, I think, with the fact we could create this kind of program.

ANTIOCH PROGRAM

I must say it is much more difficult to inject cooperative program into a going conventional college program than it is to start at that college a new program. I think that the things I will describe to you, were not elements of our program that showed up in the early twenties or in the twenties. I remember so well when I left my teaching post to go into the cooperative division of the college in 1935. At that time, I think we had just one job in public service. And, I want to pay, at this point, special tribute to President Flemming. It was he who, at that time, being a member of the Civil Service Commission, was the one person in Washington where I was working that gave me the inspiration to help to see how this program could be worked through the mechanics of civil service. I think if it hadn't been for Arthur Flemming, I am not sure we ever could have gotten off the ground in terms of placing students in the Federal Government. We went from that point to 5 years, 5 or 6 years later, we had some 40 to 50 students working in Washington. And, we have continued that kind of program to this time.

Northeastern, a relatively large university at Boston, and Antioch, a relatively small college of liberal arts and sciences at Yellow Springs, Ohio, are two institutions which make cooperative education an integral part of the program for all their students. Over 100 colleges and universities now apply some form of cooperative education and there is a growing interest in the greater utilization of experience as a vital part of the learning process. The Antioch cooperative program applies to education in the liberal arts and sciences but its aims and design can be adopted to other fields of education and to other patterns of operation.

Antioch has an enrollment of 1,850 students, with a 55–45 ratio of men and women students drawn from all parts of the world. About one-third of the students have a major interest in the humanities, somewhat less than one-third in the physical sciences and engineering, and somewhat more than one-third in the social sciences which include the fields of business administration and education. We operate on a year-round basis with a four-quarter calendar. All students spend 6 months of each year gaining experience which is not available in the classroom and most of which is off campus. Cooperative credits, which are an established curricular requirement for the degree, are earned by the student for quality performance and a satisfactory evaluation report by the employer and by the student for each period. Students normally earn 13 cooperative credits per work quarter and 90 credits are required for the degree.

ALTERNATION OF STUDY AND WORK EXPERIENCE

The alternation of study and experience periods begins in the first year. New students enter in either the summer or fall quarters and thus become identified with either the "A" or "B" division of the student body. In effect, we have two student bodies which alternate between study and work each quarter of the year with one major variation; namely, that students have two consecutive periods or 6 months

of study or of work each year in order to change the seasonal periods of study on campus. The normal Antioch course is 5 years in length. During each of the first 4 years, students study for two quarters (summer-winter or fall-spring) and have their cooperative experiences during the other two quarters of each year. During the fifth or senior year, the student may take three study quarters with one experience quarter, if he desires or needs it.

5 YEAR COURSE REQUIREMENTS

In the normal 5-year course, a student will have 10 or 12 study quarters to fulfill the 160 academic credits required for graduation with the corresponding 10 or nine experience quarters to fulfill the 90 cooperative credits required for the degree. I use the term "cooperative" or "experience" credits rather than "work" or "job" credits because we allow a limited number of cooperative periods to include other projects than job employment as, for example, independent research, a writing project, or some travel. I should also point out that we assume cooperative experience has a significant academic value and equivalence. We therefore require only 160 academic credits for the degree rather than the conventional standard of 180. I believe that most cooperative colleges do not make any credit allowance for the academic value of cooperative education but we believe it is fully justificable and our graduates appear to be well qualified academically to enter first-rate graduate intercessional schools.

I will discuss the functioning of the Antioch plan under these four headings:

1. The extramural department's role in managing the program.
2. The employer's participation in cooperative education.
3. The student's opportunities and responsibilities.
4. The curriculum and the teaching faculty's involvement.

THE EXTRAMURAL DEPARTMENT'S ROLE IN MANAGING THE PROGRAM

The college management of the cooperative program is under a faculty staff known as the extramural department. The 12 faculty members of this department have to be qualified to work effectively with students, employers, and other members of the teaching and administrative faculty. Each extramural associate is responsible for the advising and coordination for some 150 students. Each member of the extramural staff also handles job placements in given geographic areas which involve field visits with employers and students every 3 months. Thus any one staff member has relationships with two groups of students—those for whom he is generally responsible as adviser and those he places and supervises on the job. There may be overlapping of students between the groups but the two staff functions are quite distinct.

As the program has developed at Antioch over the 46 years, the scope and geographic location of jobs have been extended until now some 800 students each quarter are working on jobs across the country and indeed in several foreign countries. About 150 students are abroad on work and study projects each year. We usually have, for example, around 50 students working on the west coast every 3 months.

EXTRAMURAL FACULTY OPERATIONS

Extramural faculty divide their time each quarter so that they are on campus for at least 8 of the 11 weeks and on field trips for 2 or 3 weeks of the quarter. On the field trips, they are conferring with employers and job supervisors and seeing students on their job. Direct contact with those who are supervising the experience of students and thus influencing their development is of great value in evaluating and guiding the progress of the student. On field trip extramural faculty also visit new employers who are interested and who may offer types of experience that meet unfilled needs in the program. Constant attention must be given to finding and cultivating employers who can offer jobs on which students can be productive and on which there can be educational growth.

For clarification I should point out here that the yearly calendar of work and study periods are also arranged that a job may be kept filled continuously the year round by alternating students. Some jobs require this, others may be filled during seasonal periods only, and others may be filled intermittently. The determination of arrangements depends on the employer's situation and on the availability of students. Whether the student goes to a particular job for one, two or more alternate cooperative periods also depends on a variety of factors influenced by the employer's desires and the student's needs. Some students arrange their jobs independently but with the advice of the extramural department.

EXTRAMURAL COORDINATOR QUALIFICATIONS

The extramural associate—or coordinator as he is known in many colleges—must be basically an educator who sees the possibilities of guiding and directing students in the utilization of experience in their personal development, vocational exploration, and their general education and one who can sense those areas of business, industry, social, and public service that can fulfill these educational objectives. Furthermore, he has to be sensitive and responsive to the needs and interests of employers who make these experience opportunities possible.

STUDENT PLACEMENT FOR JOB EXPERIENCE

Before going into the employer's role in cooperative education, let us look at some typical kinds of job experiences for students. Even though many liberal arts students are very unclear about their interests and careers, they are not so different than any other students in more vocationalized fields like engineering, education, or business administration whose choices need testing and modification in the process of experience and maturity.

The younger students are placed on jobs that are relevant to whatever personal and vocational interests they can identify but with the knowledge that these early choices may change. First- and second-year students, through a process of selection on their part, with advice and direction of their extramural advisers find themselves on such job as: copy boys on newspapers; production workers in factories; clerks in department stores; aides in hospitals; camp counselors; assistants in

nursery schools; office boys with companies, law firms, et cetera; draftsmen, rodsmen on surveying crews; construction workers; farmhands; laboratory helpers; library clerks, and clerical assistants in government offices.

JOB LEVELS

The level of jobs which younger students have can be mastered quickly and often fill an important shortrun need for the employer. These elemental jobs offer excellent opportunities for students to learn what is going on in the world, how to manage a work assignment responsibly and how to take care of themselves, living in an adult world.

A student is likely to have experience in more than one area of interest or field of work during his cooperative experience. Through this range of experience he can test his strengths and limitations, explore areas of interest and gain insight which, in turn, may well influence his choices of study in college, his decisions about graduate or professional study, and his long-range plans for a career.

In the latter part of the student's program, he will have jobs that are more advanced, require more maturity and often specific academic preparation, and that have possibilities for leading into long-range employment. A number of students continue with employers with whom they have worked, although this has to remain optional with both the employer and the student. Some return to their former cooperative employers after the completion of graduate school.

I would like to describe briefly the cooperative experiences of some of our present Antioch senior students. First—two engineering seniors:

WORK EXPERIENCE OF ENGINEERING SENIORS

Mike's first job was as a laborer with the Ohio Department of Agriculture. His next work period was spent as an assistant in a New York City engineering firm. In his second and third years he worked as an engineering aide with the Bureau of Reclamation in Ogden, Utah, and as a clerk with the United States Pipe & Foundry Co., in Burlington, N.J. His last employer was Lockheed Missiles & Space Corp., in Sunnyvale, Calif., which gave him wide experience during his 36 weeks there, three different periods I might say, in various departments of that organization where he is planning to work after graduation.

Ed began his co-op experience as an engineering trainee with Commonwealth of Pennsylvania doing drafting work. Later he was an apprentice draftsman with an engineering firm in Washington, D.C., and followed this with a stretch as a farmhand in Iowa. He had two periods with the Woods Hole Oceanographic Institute as a research assistant in seismology. During his fourth year he participated in the Antioch education abroad program, studying and working at the National Institute of Oceanography in Great Britain.

The second example describes the experiences of three educational students looking forward to teaching:

Bill was undecided during his first 3 years what career he would follow, but he did have a great interest in working with children. He chose to work as an aide at the Home for Crippled Children in

Pittsburgh, as a house parent at Friendship House in Scranton, Pa., and as camp director at Elk Hill Farm Camp in Waverly, Pa. He served 6 months as a psychiatric aide at Miramonte Mental Health Services in Palo Alto, Calif. By his fourth year he was certain that education was his field and he took a job with Stanford's Children's Convalescent Hospital. He has been given a scholarship to do graduate work at Harvard's School of Education next year.

Dixie will be certified to teach biology at the secondary level. To prepare for this career she chose jobs at the Antioch Outdoor Education Center, at the Pearl Buck School in Eugene, Oreg.—I might say that she comes from Oregon. Her name is Dixie Kaiser—at the behavior research laboratory on the Antioch campus, and last year she assisted her husband for a year in operating a school for the underprivileged in Elliott County, Ky.

Included next are two students who have been concentrating their studies in the area of history and humanities:

WORK EXPERIENCE OF HISTORY AND HUMANITIES MAJORS

Scott focused early in his career on the study of history to prepare for the profession of law. His employers included a law firm in Chicago, the Chicago Historical Society, the American Ethical Union, the Book of the Month Club, and the European Secretariat of the Service Civil International in London. He is entering Harvard Law School this fall.

John did sales work at Korvette's in New York City, was an assistant at the San Francisco Redevelopment Agency, and did some research and writing for Wall Street consultants during his first 2 years as a co-op student. He then was a departmental aide in the Antioch History Department and worked as a proofreader at the Current Digest of the Soviet Press in New York City. In 1965–66 he studied and worked in Germany and Austria. During the current year he has been a research assistant at the Institute for Policy Studies in Washington, D.C., combining this with his senior field thesis work in history.

WORK EXPERIENCE OF PSYCHOLOGY AND SOCIOLOGY MAJORS

The following two senior women, who looking forward to the field of social service, have combined studies in psychology and sociology for their major field:

Amy, who is doing her major work in the department of sociology and anthropology, had beginning jobs in sales and as a copygirl. Directly connected with her field of choice were here assignments with the President's Committee on Juvenile Delinquency, and the Office of Economic Opportunity where she worked for two periods as a research and administrative assistant. Her final job was as a departmental assistant at Antioch.

Martha is a sociology major who chose as her first job the position of aide at the Home for Crippled Children in Pittsburgh and followed it with two periods as assistant teacher at the New York School for Nursery Years. She was an assistant teacher at the Neighborhood Children's Center in New York City and elected in 1964–65 to join Crossroads Africa to participate in a work camp in Malawi. Her last

assignment was as a professional assistant at the California State Department of Mental Hygiene.

Here are the experiences of two seniors who have a major interest in the field of art:

WORK EXPERIENCE OF ART MAJORS

Barbara has gained experience in the art field by choosing assignments at the Brooklyn Museum Art School, the Cincinnati Art Museum, and the Antioch College Art Department where she was the student assistant.

I might add, one of the great things we have discovered is that many colleges use student assistants as part-time help in their various departments. We make use of this entirely with our cooperative students. In other words, a student may spend a whole quarter as the department assistant of chemistry, economics, or education, or whatever academic departments the college has and can be assisted. Those student assistants are fulltime. And that's their cooperative job for that quarter. We found this to be not only an efficient way for using departmental assistants, but also a tremendous educational experience for students who assist in the educational programs of the college, motivating, I might say, a great many students to go into the field of education.

The second student, Elaine, has given herself the opportunity to observe art forms in many localities by taking jobs with the Family Fabric Shop in Reseda, Calif.; with the Metropolitan Life Insurance Co. in New York City; with Letchworth Village in Thiells, N.Y.; with the Centre de Montagne in France; with the Colorado Rocky Mountain School in Carbondale, Colo.; and with the ASUC Studio at the University of California at Berkeley.

WORK EXPERIENCE OF BIOLOGY MAJORS

Finally, let us look at the experiences of two biology students who are going into the fields of medicine and research:

Kevin is a premed student who chose as his first job to work as an orderly at Blythedale Convalescent Home in Valhalla, N.Y. After two periods as a physical education assistant in the Winnetka, Ill., public schools, he was a laboratory technician at Cortland Memorial Hospital in Cortland, N.Y. He spent 6 months as a hospital attendant at the State hospital in Dayton, Ohio, followed by a period working at the Yellow Springs Instrument Co. which designs and constructs devices useful in medical research.

Mike has been an operating room trainee at Massachusetts General Hospital; a biology laboratory technician at the Massachusetts Institute of Technology. I might add, incidentally, one of the great opportunities we have found for supplying students is within the universities or colleges, the large universities where apparently they do not have enough help to man the research in their laboratories. A number of our students go to Harvard, MIT, and Berkeley, and work as departmental assistants, as strange as it may seem, and work as departmental assistants during their cooperative periods; a very interesting evolution of the cooperative program. And incidentally, they get a

very unusual opportunity to our graduate and professional work in these large university centers. Mike finished as an assistant at the Harvard University Biological Laboratory, and has done research work in human development for the Fels Institute at Antioch College.

Well, so much for these examples. These will give you something very concrete. These are people that I pulled, somewhat at random, out of our files of senior students about 3 or 4 days ago, and simply transcribed the résumé of their experiences into this presentation.

I would like to say just a few things now about the employer's participation in cooperative education.

THE EMPLOYER'S PARTICIPATION IN COOPERATIVE EDUCATION

It is clearly recognized that without the employer's participation a college could not have a cooperative program. Over 600 employers make possible our program at Antioch each year. There are many reasons why employers participate. They can be summarized in three categories: (1) because many leading employers believe in this type of education and are glad to share, if possible, in the training and development of young people; (2) because they see the value to themselves in filling certain immediate personnel needs with students who will not only be productive employees but who will often add zest and positive morale to the group with whom they work; and (3) because they hope to interest cooperative students in the work of their organization so that some will want to continue with them after graduation.

EMPLOYERS NEEDS

Employers will not want to participate if their experience with students finds them unproductive, unreliable, and a general nuisance. It is essential that students do their jobs well and that they earn their pay at least to the same extent as their fellow employees. One of the critical and understandable concerns of cooperative employers is the cost-and-training investment in students they employ. There are several ways to consider and resolve these concerns.

I would like to emphasize this, because I think this has been one of the cornerstones of our development of our program where we move the student from job to job. And, we think we have been able to do this with certain reasons which I would like to point out here. One which we advocate is to try and set up cooperative jobs in such a way that the student can quickly become productive and earn what he is paid without costly training. There are, however, some advanced or specialized jobs where it does take time to orient and to train the students and where the employer cannot come out even unless the student continues for more than a short period of employment. It might not be too idealistic, however, to recognize that employers continually hire personnel who have received major job experiences in other organizations. In fact, they often select employees because of the breadth of their experience. So it might be reasonable for employers to participate on the training of youth for productive careers in society knowing that they will not reap the full benefit of many they train but will often benefit from those trained by others. Nevertheless, an

employer should not be asked to invest heavily in the training of a cooperative student unless he has reasonable expectation of his continued employment.

COMPENSATION

Compensation for cooperative job employment is determined in our program by the employer based on the prevailing rate for the type of work which the student performs. Naturally, there is a considerable range of pay across the areas of employment and the levels of student preparation. The last completed yearly survey indicated for men the average pay rate per week was $63; for women, $57. The range of this varies considerably in certain groups of employment. We found, for example, if we take business jobs as a group, industrial jobs as a group, hospital, schools, and so on, you will find the median ranged from $50 to a hundred dollars a week, in terms of the various groups of the organizations.

STUDENT EARNINGS AT ANTIOCH

Going back to the subject of earnings, it might be of interest to add, we estimate the total earnings of Antioch students, in general, amounts to about $1,800,000 a year. This is their total intake. This is based, somewhat conservatively, on the number of students we have and the average rate, their average pay.

I would like to speak just a few minutes about the student's opportunities and responsibilities in the program. Some of this has been covered. And, I will omit parts that I was going to give here, because Dr. Tyler and others have mentioned this. But, let me just say this much:

THE STUDENT'S OPPORTUNITIES AND RESPONSIBILITIES

Many contributions of cooperative experiences to the personal and vocational development of the student are quite obvious. The process of choosing and qualifying for jobs, the maturity which comes from living on his own, the challenge of being effectively productive in the world of reality are truly educational. The supervision and evaluation coming from the employers of the student and his own self-evaluation are extremely vital in the total guidance of the student.

IMPACT ON LEARNING PROCESS

What may not be so obvious is the overall impact that cooperative experience has on the process of learning. Most cooperative students approach their studies with critical and serious thought to the relevance and significance of academic and college studies to reality and the facts of life and living. The cooperative period provides the opportunity for many students to pursue intellectual as well as social and cultural interests outside their formal studies. They also may extend their study to these current college courses—not only in specialized subjects like chemistry, art, or psychology, but also in more generalized subjects like history, literature, or philosophy. Cooperative experiences provide a range of associations with the intellectual pursuit of ideas and values that become catalysts for all kinds of learning.

Also the style of living and learning which cooperative students develop in leaving and reentering the realm of structured academic work may well produce a more solid residue of understanding and wisdom than normally occurs in a continuum of formal academic environment. The rhythm of study and work cycles also brings about for many young people a kind of charge and recharge of energy and vigor which enhances productivity and growth.

I am reminded, Mr. Chairman, of your interest—I heard you speak a few years ago at the Higher Education Association meeting in Chicago about the great needs of educating the average student.

THE "C" STUDENT

One of the things we have noticed particularly at Antioch is the fact that the "C" student often can survive very much better on this kind of program than he can on a program of continuous study. And, I think this is very, very important, because I truly believe that one of the great needs of this country is for more and more institutions to devote themselves to the education of the "C" student. After all, the great majority of us are "C" students. And, the fact is, I have seen this worked out with many, many students. The fact that a student who, in a normal college, would flunk out, survives very well in this kind of program, because he does have some rest periods, and because he gets high motivations from his productivity, and from the things he can do well in his experience off the campus.

CURRICULUM CONTENT

There are a great many things I could say about the curriculum organization. I am going to omit that and leave it for the questioning period. It is important to realize that the cooperative program is something more than an academic program with a few jobs attached to it. It really involves a revamping, rethinking, reorganization of the curriculum contents of the college, and also the methods of teaching. We now seem to be changing the central dialog in education from the process of "teaching" to the process of "learning." The Antioch faculty are particularly challenged because their teaching relationships are with students who are having concurrent nonacademic experiences and who often view their learning in a nonconventional context. As a one-time teacher of mathematics at Antioch, I can testify firsthand that the students' off-campus experiences made them more interesting, more challenging and even more difficult to teach. At least I was forced to think more critically about the relevance of what I was attempting to do. Many upper class students have jobs which bring them in touch with new frontiers of knowledge and applications that have yet to hit the textbooks and the classroom. This kind of experience flowing back into the classroom can produce exciting new avenues of learning for professors and fellow students.

Cooperative experiences often give students a sense of what is significant in their structured courses and what may be excess baggage and is disposable. Faculty members are sensitized to make accommodations in their teaching to make learning more meaningful to the student.

Many of our teaching faculty motivate students toward observations and reflection during their job period study related to their particular subject. In turn, wherever feasible, students will be encouraged to bring their experiences into the dialog of class discussions and seminars. Thus teaching and learning in a cooperative college can become an enriching and shared experience of faculty and students in the interaction of study and experience.

One of the things which I will not have time to discuss here, but perhaps should be brought out later in the questions, is the committee of cooperative education. This is certainly true in our program. And, the fact that one faculty with some variation, one library, one administrative setup, to serve two student bodies on a year-round operation, this introduced into the operation of education an important economic factor.

Well, perhaps I have told you more than you want to know about cooperative education.

Finally, Mr. Chairman, I should say that Antioch is by no means the only model of cooperative education. There are many ways that experience can be utilized in education, depending on the local interest, needs and circumstances. Whatever your situation in Oregon may be, the applications of cooperative education are well worth exploring. Thank you.

Senator MORSE. Vice President Dawson, we appreciate this very comprehensive report. It is going to be very helpful to the committee and to the other delegates to this conference.

TRIBUTE TO DR. PROBST AND FORD FOUNDATION

Before Dr. Probst introduces Dean Roush, I want the record to show that Dr. Probst comes to us as the executive director of the National Commission for Cooperative Education. We are all indebted to him, no only for helping to arrange this conference, but the record also should show that the relationship to the committee of the Ford Foundation resulted in the Ford Foundation making available to the National Commission for Cooperative Education a grant to help the commission to disseminate information about the cooperative education program.

INTRODUCTION OF DEAN ROUSH

Before this conference, and before the one in New Mexico, Dean Roush was a very active participant in one in Indiana, and received through Dr. Probst, a grant to help defray the expenses of the conference outside of the official functioning of the Senate committee. I want this record to show, Dr. Probst, the appreciation of the commitee for the part that you and the commission your representatives made in making possible this conference.

Dr. PROBST. Thank you very much, Senator. Thank you especially for those very friendly and complimentary remarks.

I should say, among the 110 colleges and universities with programs of cooperative education at this time, and contrary to the position we were in 5 years ago, when there were only 56, our office is now receiving three to five letters a month from officers of educational institutions informing us that faculty and trustee's decisions have been

taken to establish cooperative education. I was most gratified to receive such a communication last month, for example, Senator Morse, from the Engineering Division of Howard University, where the faculty and trustees have decided to inaugurate such a program.

But among the 110 colleges and universities, as far as our survey shows, there are 14 which engage in the use of cooperative education in the field of teaching training.

I am delighted to introduce Dean Donald Roush of New Mexico State; he is the dean of the school of education there. They operate a program which has, I think, a most important possibility, for us all. Dean Roush.

STATEMENT OF DEAN DONALD C. ROUSH, COLLEGE OF EDUCATION, NEW MEXICO STATE UNIVERSITY, UNIVERSITY PARK, N. MEX.

Dean ROUSH. Thank you, Mr. Chairman, ladies and gentlemen of the audience, it is my opportunity today to bring to your attention some of the exciting opportunities in cooperative education as those opportunities relate to teacher education.

TEACHER EDUCATION PARTICIPATION IN CO-OP PROGRAMS

As has been stated several times this morning, over 56,000 students are currently enrolled in work-study cooperative educational programs. These opportunities are available at 110 colleges and universities in 29 professions. But, less than 1,000 of the 50,000 students are preparing to become teachers and only 14 cooperative programs for teachers are available in higher education. Only one university offers a full 4-year cooperative program in teacher education with all the work phases in the public schools. Moreover, Mr. Chairman, the Federal Government offers student-trainee appointments through cooperative work-study programs in the civil service of the United States to college-bound high school graduates and college undergraduates in at least 14 professions and not one in teacher education.

The neglect of the "mother of all professions" may well be the major educational tragedy of the 20th century. Last night, Senator, you said so very well that we are the trustees of educational opportunities. A most significant question that we trustees might ask ourselves is: "Why should these other professions be placed in a more advantageous position to attract and recruit talent at the preparatory level—especially since they may be more competitive in a material sense at the entrance to employment?"

SALARY COMPARISONS

The college placement council, in a salary survey of 116 colleges coast to coast, reported that this is the most competitive college recruitment season ever. National average monthly starting salary offers for males, all bachelor's degree candidates, ranged from $579 in humanities and social sciences to $729 in chemical engineering. These annual starting slaries are $2,000 to $4,000 higher than beginning teacher salaries.

Justification for these penalties, both at the preparation and employer level is difficult to find. Colleges and universities have done an effective job in helping business and industry find bright, promising

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students. However, these same colleges and universities have failed and are currently failing to provide the teaching profession with enough bright and promising students for the teaching positions to educate the potential engineer, scientist, doctor, or teacher.

When industry and business—and I want to take nothing away from those wonderful cooperative programs, they are tremendous; I hope they have 56,000 more students in the next 10 years—but when industry and business take the people most eminently qualified to serve as teachers, the trustees are degrading rather than upgrading the education of our Nation.

TEACHER SUPPLY CRITICAL PROBLEM

Who will perform the task of teaching is one of the most critical problems facing citizens of this country. Teacher supply is below the demand level every year. But an adequate number of teachers is only part of the problem. Competing for the talent is primary and every parent wants and has a right to expect that a capable individual will teach his child.

Lawrence S. Derthick, while U.S. Commissioner of Education, speaking before the subcommittee of the Committee on Appropriations of the U.S. House of Representatives in 1960, described the importance of this gigantic task as follows:

> Thus we believe, Mr. Chairman, that from our unique system of democratic education, which has no counterpart on earth, we can reap an almost mystic yield—the product of which creates markets, magnifies industry, and multiplies the fruits of freedom in terms of improved health, better government, higher standards of culture, and a greater appreciation of human dignity. But let us never forget for one moment the seedbed from whence our harvests come. Our schools must be maintained and nurtured by constant striving, toil and sacrifice. Should we fail them, we will not reap a harvest of good, but rather a whirlwind of chaos and destruction.

Five years later, the U.S. Congress made a major move to improve education by passing Public Law 89–10, the Elementary and Secondary Education Act of 1965.

Senator Morse, you told a fascinating story last night about how this law finally became a reality.

But, if we continue to ignore teacher education needs in the competition for talent in such potentially promising areas as cooperative work-study and other programs, we might "devour the seed corn" which undergirds the harvest.

LIMITING FACTORS ON USE OF PROGRAM

For many years the limiting factor to cooperative education for teacher preparation was money. Industry could subsidize the work phases of preparation for business and professions but the public schools were not in such an enviable position. The advent of extensive Federal subsidies for working students and for the improvement of school programs diminishes this limitation, but does not solve the problem.

At the risk of seeming to propose a panacea through cooperative work-study preparation, it can be said that this avenue in higher education holds promise for meeting pressing needs in teacher preparation.

DESCRIPTION OF NEW MEXICO STATE UNIVERSITY WORK STUDY PROGRAM

At New Mexico State University a program, initiated almost 2 years ago, comes to grips with several pertinent problems:

1. Human talent in America is too often tragically wasted.
2. Approximately 200,000 talented high school graduates cannot afford college.
3. Three of every four State colleges and universities in the Nation increased their tuition costs this year.

In the cooperative program in teacher education at our school, over 100 of the youngsters have been identified, selected, recruited, and provided subsidy to meet these most pressing problems in a talent search for teachers.

We simply "tapped into" title I–C of the Economic Opportunity Act of 1964 work-study program, identified able youngsters from low-income families who wanted to teach, and launched a cooperative program in teacher education. May I state at this point that Mr. James Moore, Director of Student Financial Aid, was a key person in helping us implement this program. These youngsters alternate semesters of study with semesters of laboratory experiences in the public schools. The laboratory semesters are referred to as work phases since the students are paid progressively at GS–1, 2, 3 and 4 levels for their 40 hours per week in services rendered to teachers as aides while learning to become teachers. One-half of each group of students is in the public schools each semester while the other half is in the carefully planned study phase. Their assignments are reversed so one group replaces the other at the semester change.

All first-year students are assigned to elementary schools and all second-year students to the junior high schools. Third- and fourth-year students are assigned to elementary, junior, or senior high schools depending upon their career interest. They serve as assistant teachers in the third year and as coteachers the fourth.

A generalized goal is to produce a potential superior teacher who will start his career as an "experienced beginner."

Although we are just completing the second year of the program the experience of the students, public school teachers, and members of the staff has convinced us that this is a superior way to prepare teachers.

We are gathering important data on the effectiveness of teacher aides, the implications of laboratory work experiences to a professional education course sequence, and differences in student performance and attitude compared with more traditional programs of teacher education.

LIMITATION OF PROGRAM

One serious limitation is the necessity to select youngsters from low-income families only. Applications have been received from hundreds of very able youngsters whose parents earn $5,000 or $6,000 a year. They earn $2,000 too much, if you can imagine, in order to be selected for this program. If teacher education is to have equal opportunity to participate in cooperative education programs, this limitation must be eliminated.

Senator MORSE. You have my vote.

Dean ROUSH. Thank you.

TEACHER CORPS

Senator MORSE. May I interrupt further. This is fascinating testimony. I think it is going to be very helpful to us when we get into committee to discuss one of the most controversial issues that will face us this year; namely, the Teacher Corps program. There is much support in the Senate for the Teacher Corps but less support in the House.

I have been thinking as you have been testifying that your statement is going to be helpful to us because it seems to me we can expand this program. We can use it as the proof of the need for the type of Teacher Corps program that we have been supporting. Also, there flashes through my mind, in listening to you, the memory of a report that my subcommittee received some weeks ago. I understand that within 10 years, there are going to be more teachers in the United States at the various levels than there will be farmers. This is a statistic which will give you some idea of what is happening in the agricultural part of our economy with automation. It bears also on the need in the educational phase of our economy for more teachers. We must meet this need.

The report pointed out that even with that number of teachers, in 10 years, there will still be a great shortage of qualified teachers to meet the educational crisis. These are the kinds of data that are going to be helpful to this subcommittee. I value receiving it along with what Dr. Tyler and Vice President Dawson have already given us. I didn't mean to interrupt you as long as I did. This is very vital material.

Dean ROUSH. I am glad you did. Thank you very much. I might say that we have a Teacher Corps at our institution too. We are very excited about that and the future possibilities.

We have found that the work experience has a highly personalized meaning for the students. I would like to invite you to listen for the meaning, check the attitude, and note the insights as I conclude my remarks by reading a report of one of our students when she was a first-year co-op. It says volumes about cooperative education.

STUDENT REPORT ON TEACHER CO-OP EDUCATION ACTIVITIES

We require these youngsters to keep a daily log and turn it in weekly so we could detect any problems and prevent any major misunderstandings from occurring. And this young lady decided that she would present her log in terms of a letter to her mother. I shall quote it:

DEAR MOTHER: Everything is going fine. I thoroughly enjoy working at a school where everyone is so friendly and helpful. I feared at first that I would be looked upon as an outsider, but was I mistaken. The principal and the teachers seem very glad that I want to become one of them. Everything they say and do is so warm and sincere that one cannot help but respect them. If this is how everyone feels about teachers, I surely want to be in that profession.

Remember when you asked me whether or not I thought my work was worthwhile? Well, let me tell you some of the things I did these last two weeks and the value I absorbed from them.

On October 19, I graded papers. I found out that a teacher must have patience when trying to read his pupils' writing. I had to fight down the urge to throw up my hands and give up. I reminded myself that, as a teacher, I will be grading papers for almost all of my life so I might as well get used to it. This also applies to listening to others read aloud. I must remember that just because *I* know how to read (?), that it doesn't mean I always did.

On October 22, I laminated charts and pictures in Mrs. Carter's room. This teacher asked me to put myself in a pupil's shoes and tell her how I felt about her teaching methods. Gee, this put me in a spot. I just didn't know what to say, but I knew she was expecting an answer so I told her how I felt. I said that she was very effective in getting points across to the students. Also, I told her that she was firm but not stern. From this, I learned that, as a teacher, I should remember to consider how I appear to others.

On October 27, I typed test papers for a teacher whom I had regarded as being a little aloof. Mom, I promised right then and there not to judge people before I get to know them. That teacher proved to be so nice that I was ashamed of myself for forming such an unjust and unfounded opinion. You know, this environment is helping me find my strengths and weaknesses. I realize that I must get to know myself thoroughly before I can deal with the minds of others.

On November 1, I did some overlays for a teacher. I was in that classroom all day and this gave me a chance to observe the teacher as well as the pupils. Mother, I wonder if all teachers are sentimental and if it is all right if they are. Let me tell you why I say this. There was this girl who seemed to be very poor and alone. Some of the boys had teased her that morning about her dress being so short. Later on, while the teacher was reading to them, the little girl began taking the stitches off the hem and letting it down. Gosh, I almost cried. I felt so sorry for the girl. I looked at the teacher to see if she had noticed. Well, she didn't appear to have seen anything, but when the recess bell rang, the teacher quietly took the girl aside and pressed the hem with a sealing iron. I know now that when I become a teacher I am going to let my heart be my guide in some circumstances. A teacher plays a very vital part in the molding of the character of a human being and I certainly don't want to be responsible for turning out a cold, mechanical person. I'll show by example that people can be friendly and affectionate.

Well, Mom, I guess you can conclude from this letter that my job is not just *work*. I hardly think of it as that. Instead, I consider it an excellent opportunity to get additional training and background for what I plan to do the rest of my life—*teach*.

Your daughter,

ESTELLA AVALOS.

I would like very much to have that youngster teach my children. May I remind you that Estella Avalos would not be in college without this program. That was clearly out of her reach. Her parents earn less than $3,000 a year. Also, I want you to know that her letter has not been edited.

In summary, Mr. Chairman, when Dr. John Gardiner and others are sounding a call for a greater number of able teachers in the classroom and when all the professions are pleading their needs before the oncoming generation of talented youth, the teaching profession must find better ways to compete for the talent it so desperately needs. We believe cooperative education is a better way.

CO-OP EDUCATION—A BRIDGE BETWEEN SCHOOL AND WORK

Cooperative education attracts talented students. Teacher education needs them. Cooperative education provides invaluable field experience. Teacher education can use it. Cooperative education bridges the gap between the world of school and the world of work. Teacher education has this leap to make.

Mr. Chairman, thank you for this opportunity you have given me today.

Senator MORSE. Thank you very much, Dean Roush, for this very helpful testimony.

Dr. Probst, will you introduce our next witness? After we have heard Mr. Godfrey, we will recess for lunch, and reconvene at 2 o'clock.

Dr. PROBST. Senator Morse, it is my very great pleasure to present Mr. James T. Godfrey, who is in charge of the Lockheed Corp. for bringing in students from institutions with cooperative education programs. He is from the Lockheed Missiles & Space Division in Sunnyvale, Calif. Mr. Godfrey is also president of the Cooperative Education Association, which is a group of approximately 700 people, containing within it educators, and people from business and industry who are interested in expanding this kind of program.

Mr. James Godfrey.

STATEMENT OF JAMES GODFREY, LOCKHEED MISSILES & SPACE CO., SUNNYVALE, CALIF.

Mr. GODFREY. Thank you. Senator Morse and distinguished guests, greetings from lower Oregon. Down there, we call it Baja Oregon.

Dean Roush, I was formerly a mathematics and science teacher. I certainly agree with everything you said, and give you the strongest support for your program. This is a tough ax to grind, particularly when it's almost lunchtime. But I will do my best.

Senator MORSE. You go right ahead in your own way.

Mr. GODFREY. I am here today in two capacities. One as coordinator of the cooperative education program at Lockheed Missiles & Space Co., to give you an employer's-eye view of cooperative education, and the other as president-elect of the Cooperative Education Association, to tell you about a young and dynamic professional society of co-op school and employer representatives who are devoted to increasing the understanding and utilization of what we are sure is a superior form of higher education.

EMPLOYER'S-EYE VIEW

I will spend the major part of my allotted time wearing the first of these two hats. You might wonder, "Why is a corporation like Lockheed involved in cooperative education?" "What's the motivation?" "What's in it for them, in other words?" Well, I will attempt to give you the answers that I have given to my management on a number of occasions, and I'm still called upon to do. In reality, however, it's the cooperative education students themselves that really provide the answers. And they continue to answer these questions.

LOCKHEED EXPERIENCE

Perhaps the best way to demonstrate this point is to briefly describe the history, development, and current status of the cooperative education program at Lockheed Missiles & Space Co. Not that this is an ideal model for development of an employer co-op program, but it is the one I'm familiar with, and it seems to be working.

We hired our first co-op students in 1959—two each from the University of California at Berkeley and San Jose State College, these being our neighboring institutions there. We hired them not really because we wanted to, but the idea was advanced from the two schools and it seemed like a benevolent and neighborly thing to do at the time. We were talked into it, you might say. A year or so later a

Northwestern University alumnus in the company arranged to bring in a Northwestern co-op student. Shortly thereafter a few students from Antioch College and MIT were added in much the same fashion. And, to demonstrate some of the growing pains of our program, these pioneer co-op students were not always given work assignments that were oriented to their interests and academic levels. To exaggerate only slightly, one student finally complained that the blisters he obtained from his broom handle were seriously affecting his ability to manipulate partial differential equations in his evening course. [Laughter.] Advance planning also left something to be desired in those days. Another co-op student from the Midwest presented himself in the employment office to start a prearranged work assignment, and nobody had ever heard of him or had the slightest idea about what a co-op student was. Shortly after these events, our cooperative education program was born—some 3 years after the first students started to work.

You might say that up to that point we were really functioning as an employer of students in the Government work-study program. There really wasn't an integrated attempt to make the experience meaningful to the students which we were providing jobs for money; that was about it. At this point, we reevaluated the situation. We revised our policies and procedures and formalized them and made very definite attempts to find more appropriate work assignments for students. We also made serious efforts to orient supervisors and department managers to the philosophy of cooperative education and the long-range benefits accruable to the company. In 1963, we felt ready to expand the program, and we contacted a number of additional schools.

PROGRAM EXPANDED IN 1963

And, in late 1963—things happened quite rapidly during that year—the bottom of the aerospace business was sagging noticeably, and we had to postpone our expansion plans. However, I would like to point out that, in spite of that serious downturn in that industry, the co-op program was well enough accepted at that point, that we could maintain it at the then-existing level. Although some 4,000 regular employees were either transferred to other Lockheed companies, or laid off, not one co-op student was terminated. We had then, and continue to have, a very strong feeling about living up to our commitments to the several colleges and universities with which we cooperate, and to the individual students also.

EXPANSION OF PROGRAM IN 1964

Well, in late 1964—with prosperity "just around the corner"—we dusted off our expansion plans, and we went out and resold the idea to our higher level management. As a result, in June of 1965, the number of students at work was boosted from 17 to 50, for a total of about 100 students active in the program from 17 different colleges and universities. We have continued to expand since then at a more or less steady rate, and presently have a total of 212 students active, from 26 different schools.

CURRENT EXTENT OF PROGRAM

By July of this year, we expect to have about 250 students active, with 150 at work, from 28 colleges and universities. The two newest schools to start cooperative education programs, on an experimental basis, with Lockheed as the first employer, are neighbors of yours—Washington State University and the University of Idaho. I don't know, George, whether these numbers are included. They are no experimental programs. You might say there are 112 schools now, instead of 110. Well, as of this summer, we will have nine engineering students from Idaho University, and three from Washington State. Idaho's program is really more than experimental. It has been fully approved by the president of the university and the Idaho Board of Regents. I might mention, also, we do have the program with our neighboring junior colleges; we call them that in California, and community colleges here in Oregon and elsewhere. Presently, we have only students who are in the transfer programs such as when they complete their 2 years, say, at the College of San Mateo or Foothill College—those are the two that I mention—they will transfer to either the University of California or one of the California's State colleges.

FUTURE EXPANSION PLANS

Eventually, however, we do plan to set up a program where we will hire some of the terminal 2-year students, the ones in the technician programs and this sort of thing.

Our primary need will always be for co-op students in engineering, mathematics, and the sciences. However, we also employ small numbers of business administration and liberal arts students for work in administrative data processing, accounting, and engineering administration, and we hope to increase the number of appropriate job assignments for these kinds of students in the future.

GRADUATE CO-OP EXPANSION

Within the past year we have added two special adaptations of the cooperative education program that are, I think, worthy of mention. The first is a graduate co-op program. We presently have 12 graduate engineering students on an alternating work and study basis—most of them from the University of California at Berkeley. The concept of graduate cooperative education in engineering was given a tremendous boost in California by a group known as the Engineering Advisory Council. This is chaired by a man named Mr. J. Perry Yates, executive vice president and director of Bechtel Corp. The council is composed of representatives from all of the professional engineering fields in the State of California, and utilizing the consulting services of the engineering deans and faculty members from all of the University of California campuses that offer engineering. In September 1965, this group completed and published a document known as "An Engineering Master Plan Study for the University of California." This study was requested by Dr. Clark Kerr, then president of the university.

ENGINEERING GOALS STUDY

Many of the recommendations contained therein closely parallel what is called the Engineering Goals Study conducted by the American Society for Engineering Education. Among these recommendations that were made in both of these studies was that the first professional degree in engineering should be established as the master of engineering degree, and much greater emphasis was put on the doctor of engineering degree, as a means of fulfilling projected needs for far greater numbers of better qualified professional engineers.

CALIFORNIA MASTER PLAN

As a part of these recommendations, the California master plan study strongly emphasizes the need for practical, professional-level experience as an integral part of the master of engineering and doctor of engineering programs. This is the major difference between the California master plan study and the ASEE engineering goals study. The following is a direct quote from the California master plan study:

It is considered very important that the first professional degree requirements include full-time engineering-related experience. The reasons are that the graduate should be prepared to perform productively rather soon after graduation, and that the experience, obtained largely in summers, will give greater meaning to his studies. The experience should be monitored by the university and coordinated where possible with the student's study program. Approximately six months (two summers) of such experience is suggested to give the necessary guidance and background to the new Master of Engineering. The undergraduate cooperative work-study program at Berkeley will surpass this experience requirement. This program should be encouraged and enlarged and such programs should be initiated on other campuses. It provides an excellent enrichment and orientation for engineering education. It will be profitable to explore the initiation of such programs for graduate students.

I quote again from another part of the study.

The Doctorate of Engineering, or a professional PHD, should require a period of guided practice of engineering in industry or government in addition to study at the university. This experience, properly combined with the Doctor of Engineering design or development project, would play a major role in preparing the student for professional engineering and in giving greater meaning to his university studies. Most important, the combined experience and project would provide the final demonstration of professional creativity and performance, somewhat analogous to the research and dissertation of the PHD student. This combined experience and project is called an "engineering internship."

End of quote. The study goes on to recommend a full year of professional experience as a requirement for the doctor of engineering degree—over and above the experience requirement for the masters degree.

APPLICABILITY TO THEIR DISCIPLINES

I don't mean to digress too far from what I was saying—but I did want to show the motivation for graduate engineering co-op programs in the State of California. Also, it is a simple matter to transfer this kind of thinking over to disciplines other than engineering—both undergraduate and graduate programs.

COMPREHENSIVE STUDY FINDING

I think Dr. Tyler mentioned one finding from the comprehensive study that was done. There is achieved, by means of cooperative edu-

cation, much better cooperation between the community, the industry, business, the Government, and the schools, and, as I am sure most of you are aware, and agree, this is a definite problem in our society right now. We need to do all kinds of things to break down barriers or, as Chancellor Lieuallen put it, to make this "figurative wall" crumble between the schools and the community.

Well, as a result of this study here that I quoted from, we have all kinds of palaver with the University of California that we never had before. And, I am sure they are experiencing the same thing with other industries and Government agencies in the San Francisco Bay area.

TRAINING OF SUPERVISORS

To continue—the second adaptation of our cooperative education program that I mentioned is designed to provide a continuing supply of college-trained manufacturing supervisors. Presently we have eight students majoring in industrial technology, industrial engineering, business administration, and one industrial arts major, that are being rotated through a variety of manufacturing assignments oriented to eventual supervisory responsibilities.

PHILOSOPHY OF COOPERATIVE WORK-STUDY EDUCATION

At this point, I would like to briefly analyze our co-op development and expansion to help demonstrate our general philosophy on cooperative education. At some point during the evolution of a co-op employer, it becomes apparent to someone that meaningful work assignments must be arranged, and a tentative plan for rotation among several different departments or activities must be set up for each student. This should not be an inflexible plan, but should provide a general guideline for the student. Revisions can be made by mutual consent during the execution of the plan. In general, we try to start a beginning engineering student, one who has completed his freshman year or thereabouts, in a production-oriented job, giving him a chance to get his hands dirty and find out what the hardware is like, for instance. Actually, when he gets into engineering itself, he will find our principal product is paper, and not parts and missiles and things like that. But anyway, this is where we like to start them. We are not able to do it in all cases, but we like to. Then, we give him some experience later on in testing, liaison engineering, design, and finally, probably the last two or three work periods in an engineering department where he is working with and for engineers. Keep in mind, I am talking about engineers, because this is the purpose of our program. You can transfer this to about any profession or vocation that you can think of.

At any point along the line the plan can be changed. For example, if the student's interests develop more along analytical lines, rather than design, he can be reassigned to an analytical group, or research if this happens to be his new orientation. The point I wish to make is that the initial job assignment and job plan seem to be the necessary prerequisites for a successful co-op experience. This is the beginning of a self-perpetuating and self-expanding program as far as employers are

concerned. The well-placed student is more apt to apply himself diligently, thus creating better feelings in his supervisor toward co-op students in general and, also, creating increased demand for co-ops.

STUDENT GENERATES ENTHUSIASM

On many occasions, supervisors and managers who were not formally "sold" on the merits of the co-op program have requested that students be assigned to them. They heard about it from an enthusiastic supervisor of co-op students in the neighboring department, at the staff meeting, or maybe down at Joe's Bar & Grill. At any rate, they heard about it. All sorts of new job opportunities for co-op students can develop in this way. The key point here is that the student is really the one who generates the enthusiasm. Many times he is not necessarily placed in the ideal job assignment, but applies himself anyway. Almost without exception, these young men and women—and we do have some young women engineering students, mathematics students, physicists and so forth—are eager, industrious, and make excellent ambassadors for their schools. This creates another avenue of communication that hasn't existed in other ways.

Sometimes I hear statements from managers in the company such as, "I need graduate engineers, not co-op students." An analysis of the given activity usually reveals that a great deal of the work presently being done by graduate engineers, sometimes very reluctantly, I may add, could easily be handled by an undergraduate co-op student and would be most educational for the co-op. Also, while working as an assistant to an engineer or engineers, while doing things like plotting graphs, doing mathematical analysis, programing problems for computer solution, and the like—the student learns about the work going on in that group and observes what engineering work is all about. The engineers learn to depend on the co-op student and in most cases request a replacement when the first co-op is ready to return to school. And, more often than not, they want the original student back for additional work periods. Sometimes this is appropriate and sometimes not. We try to move them around; we try to give them as much breadth of experience as is possible. In any event, this resistance to losing the services of a particular co-op student is a healthy attitude, as compared with the initial attitude held by some of these same people.

By now, it is probably obvious why we and other employers engage in cooperative education programs. We do it, somewhat perhaps, out of a feeling of benevolence, and perhaps this is the way we started. It's an idealistic view, and we still maintain that. We are not rigid about it.

CO-OP STUDENTS SUPPORT GOOD BUSINESS PRACTICE

However, I think this is the main reason—we want these students back as full-time professional employees when they graduate. And, we get them in sufficient numbers and proportions to make it worthwhile for us. It's good business—especially in today's highly competitive professional manpower market. Also, we have found that graduates of our co-op program are superior to graduates of the normal 4-year curriculum. They are more productive; they are im-

mediately productive; they are technically better qualified—even though sometimes a comparison of grade point averages might indicate otherwise, and that's the way we hire most of our graduates. We put a great deal of emphasis on grades, of course.

As Dr. Tyler pointed out this morning, they have developed some skills in human relations that the graduate of the 4-year curriculum just doesn't get. It takes him several years to get it when he gets out in the real world and starts working. Just learning the system of a large company, how to get from here to there, who to see, where to go, this sort of thing, it takes a long time. And they are more stable; there's another good reason. They are less apt to quit in disillusionment after a year or so. They appear to have found their niche in life much sooner than the graduates of a traditional curriculum. In the words of Dr. Frank Jakes of the Ford Motor Co., and I quote him: "Co-op graduates land on their feet running." This, I think really wraps it up in a nutshell.

PAY SCALE HIGHER

We and other co-op employers fully recognize the increased value of co-op graduates. We pay them more than traditional graduates; all other factors being equal. We pay them more even though their co-op experience has been with another company. And other companies recognize the value of co-op experience at Lockheed in the same way.

To cite an example, we now have a young engineer working for us who had gone all the way through our co-op program as an undergraduate—a total of 18 months of co-op work experience. This young man graduated from Northwestern University at the top of his class in mechanical engineering in June of 1965, and received an award for being the outstanding engineering graduate from Northwestern that year. He went on to MIT that fall with a National Science Foundation fellowship and returned to work at Lockheed after receiving his master of science degree in aeronautics and astronautics with high honors in August of 1966. At that time, he told me that another aerospace company—located in the Northwest by the way—had offered him $5 a week more for his Lockheed co-op experience than Lockheed had offered him. [Laughter.] It became apparent that other folks valued our co-op experience more than we did ourselves. Fortunately, this bright-eyed young man did not base his permanent employment decision strictly upon monetary considerations. [Laughter.] Otherwise, I probably wouldn't be telling you about him. We did revise our policy on salary recognition of co-op work experience as a result of this incident and a resurvey of existing practice among co-op employers. [Laughter.]

To date we have retained about 60 percent of the graduates of our cooperative education program. Mr. Chairman, this June we will have 36 co-op students graduating and available for permanent hire. We expect to retain 27 of them—or 75 percent—and hope to maintain this retention rate in the future.

FORD MOTOR EXPERIENCE

Ford Motor Co., who has one of the largest cooperative education programs, from the employer's standpoint, in the country, states an

overall retention rate of 70 percent over a period of time—and a variety of other companies report retention rates from 55 up to 95 percent. I rather suspect those reporting 95 percent are fudging a little bit. We don't feel that we have wasted money on those graduates who choose not to return as full-time employees. While employed as undergraduates, they have earned their way completely. They have performed useful work and, in most cases, have given more than they received. And, this is a very sincere statement. So, we are not out anything if they don't come back. But, we certainly want them to come back.

WORK RELATED TO STUDY

At this point, I would like to draw attention to what I see as a key difference between the present college workstudy program, administered by Mr. Moore's office, and a true cooperative education program. That difference is the value placed upon the experience by employers. The experience gained from participation in a true cooperative education program is, for the most part, recognized as professional-level experience, and is rewarded as such. The work-study experience is, more often than not, totally unrelated to the student's field of study, and thus has little or no monetary value in the marketplace.

Not that it doesn't have value other than money; I am sure the work experience has value, whether it be pushing a broom or whatever.

I counted up, I think, all the different part-time jobs that I had held during my college days, the occupations that I had, and it came to around 25. This is very valuable. I wouldn't trade this for anything. I don't mean to demean this part of it. The point is, to put it on a strictly economic basis, the true cooperative education experience has professional value. It's recognized as professional-level experience.

SIZE OF COMPANY IMMATERIAL

In closing this first part of my remarks—and please don't be alarmed—the last part is going to be very short, about 1 minute, I would like to point out that an employer does not have to be large to effectively employ co-op students. Granted that a large company like Lockheed can provide a wider variety of jobs—we have some 28,000 employees in this one Lockheed Co., one of six major subdivisions of the Lockheed Corp. I don't think this is a necessity. I believe that an employer of any size can, with a little ingenuity, develop a cooperative education program that can provide students with useful and progressively more responsible experiences and—at the same time—can be economically feasible and rewarding to the employer. To reiterate what many people have said before, this is a form of education where everyone involved benefits—the student, through study-oriented experience; the school, through improved communications with employers which leads to a better product from that school—the graduates; and the employer, through obtaining better graduates more efficiently and economically than is possible using conventional recruiting methods. These are just some of the advantages that have been pointed out to you already.

STUDENT INVOLVEMENT

Dr. Tyler made a statement that I want to comment on briefly and subscribe to. He mentioned the need for students in this day and age

to get involved; to be involved in the adult society, and to take part in what is going on. He mentioned this as a reason for some of the activist groups that have sprung up on campuses, just like the one up the bay from us. I feel as he does, and as everybody who is in cooperative education does, that this is the ideal way for the student to get involved. He can't possibly find his niche, find what profession he should be in, without some experimentation which becomes more and more difficult to get as time goes on, and as our society becomes more and more complex. He needs to broaden his base of experience from which to choose.

EXISTENTIALIST UMPIRE

I am reminded of a story here about three baseball umpires in the winter Hot Stove League; they were being interviewed by a sports editor, and they were asked what was their philosophy in calling balls and strikes when they were umpiring behind homeplate. One of these umpires was an existentialist. The first umpire questioned said, "I calls them the way I sees them." The second umpire when asked what he thought about and what was his philosophy in calling balls and strikes, said, "I calls them the way they are." And the third umpire, who was the existentialist, when asked the same question, said, "They ain't nothing until I calls them." [Laughter.] I think there is a lesson to be learned here from cooperative education. A profession is nothing until you get exposed to the work phase of it. And, that is what cooperative education can provide. That's the first part.

PROGRAM OF COOPERATIVE EDUCATION ASSOCIATION

The second part, I am representing the Cooperative Education Association as president-elect, and I would like to tell you just very briefly about this society. It is composed of representatives from cooperative education schools, employers, and everybody who has an interest in cooperative education. Regardless of where they come from, they are welcome to join.

We presently have some 700 members in this association, as George Probst mentioned, and we are launching a new membership drive. And, we expect to have 1,000 members by July 1 of this year. I will have—I don't mean to make this commercial, Senator Morse——

Senator MORSE. No charge.

Mr. GODFREY. Thank you, sir. I will have available on one of the tables here this afternoon some small leaflets that you might like to look at. And, I don't mean really to have this out for the purpose of twisting your arms into joining the association; but, I think you might like to pick one up and read it and find out what the objectives of the association are. I don't think I want to spend any more time on this right now, since we probably all are ready for lunch. I certainly appreciate the opportunity to speak here today, Senator Morse. Thank you all very much.

Senator MORSE. I appreciate, on behalf of the subcommittee the privilege of hearing you and your participation in making a record. It has been excellent.

Before we adjourn for lunch, may I say Dr. Probst and Charley will take charge of lunch. It is a very informal affair.

I am going to change my previous announcement because time is of the essence. I am anxious to get you back on the record, so we can give everyone an opportunity to help make the record. We will reconvene at 1:45.

PROCEDURE FOR AFTERNOON SESSION

The ground rules will be, I shall first call on Mr. Moore. I think Mr. Moore should have the first opportunity to comment on what the panel has testified to, and add any additional comments that he wishes to make in behalf of the Department for the record. Then, the subject will be turned over to the delegates for comments from the floor. I think it is only fair in order that we can pass the opportunities around, to suggest that you not exceed 10 minutes in your comments or in the colloquy that you might have with members of the panel, although you are not going to be limited to that, if the situation warrants longer discussion.

Please announce your name so the reporter may have your name for his transcript. The transcript of the record will be made available to you before final printing for corrections and for supplementation. After all, we are seeking, as a subcommittee, to get all the information that we can. If you want to supplement your statements from the floor by filing a memorandum, it will be printed along with your floor statement. That will be permissible.

We stand in recess until 1:45 this afternoon.

AFTERNOON SESSION

The subcommittee convened at 1:45 p.m., after recess. Senator Morse, chairman of the subcommittee, presiding.

Senator MORSE. In the interest of time, I am going to proceed, and Dean Roush can join us when he arrives. Dr. Tyler had to leave to catch a plane to Rochester. But, since we want the benefit of your suggestions to be put into the record as completely as possible during the afternoon session, we should now start.

I am very pleased to be calling upon Mr. Moore, from the Department of Health, Education, and Welfare, because I think it is very important that we have the benefit of his point of view. Mr. Moore is Director of the Division of Student Financial Aid, Bureau of Higher Education in the Office of Education. He knows me well enough to know that when I call upon him to make a statement before the subcommittee, I want him to tell us whatever he thinks is necessary to be said, whether he agrees or disagrees with the proposals made for the record. I want you to know, Mr. Moore, that I appreciate very much your being here, and I shall express to Secretary Gardner the thanks of the subcommittee for sending you to be with us.

Before Mr. Moore proceeds, the Chair directs subcommittee inquiries of the Office of Education and replies thereto relative to the technical aspects of the bill be incorporated in the hearing record at the appropriate points.

You may proceed in your own way, Mr. Moore.

STATEMENT OF JAMES MOORE, U.S. OFFICE OF EDUCATION, WASHINGTON, D.C.

Mr. MOORE. Thank you, Senator. It is a real pleasure for me to be here this afternoon.

Senator MORSE. Would you take my chair, please. They don't seem to be able to hear you.

Mr. MOORE. All right. In the audience is Byron Doenges, who was one of the primary architects of the NDEA loan program way back in the late 1950's when Secretary Flemming was trying to help the Office of Education get this very important new program in operational status.

We have come a long way in the matter of student financial aid since that time, because of the very many new and parallel programs which have been added to the original NDEA.

DEVELOPMENTS SINCE 1964

I thought I might be of most benefit to the audience if I took just a few moments to review what seems to me to be some of the very important connections between the development of the work-study program from the time it was enacted in August 1964, to the present, and this whole concept of cooperative education. There are, in place right now, certain very definite links which make it a rather admirable vehicle from which to project from both a planning and operational standpoint truly cooperative education arrangements. Some of these points really aren't too obvious unless one has had to work with the legislation and with the administrative network. But, just let me pick off four or five of them for you.

First of all, as you will recall, the work-study program was and still is, strictly from a legal standpoint, part of the original Economic Opportunity Act. It was, at the time of passage, clearly devised as a financial-aid program to assist students from low-income families. And, as you financial directors in the audience will remember, our early guidelines set up criteria which were used to assess this matter of a low-income family.

At the time the legislation was being developed, questions were raised with us in the Department and with the committee as to whether or not this program could not in some way be adapted to the idea of cooperative education which really meant using the program to support students who were on interim full-time assignments. That is not in the law, because the law talks only about a student working for 15 hours a week during any week in which he was attending class.

In the committee reports, both the House and Senate, which heard the bill, you will find statements, which clearly indicate that where the student was limited to 15 hours while he was attending classes, during vacations and other periods, he could work full time.

With that little beginning, we were then able to say to people who, as Dean Roush indicated this morning, wanted to develop an essential cooperative education program, this could be done provided, of course, other criteria with respect to student eligibility were met.

1965 AMENDMENTS

In the 1965 amendment to the Higher Education Act, the need criteria were in fact broadened.

Senator MORSE. May I interrupt; are you having trouble hearing? Something has gone bad with the mike.

Mr. MOORE. Can you hear me back there?

Senator MORSE. Go ahead.

Mr. MOORE. I'm sorry. In the 1965 amendments the need criteria were broadened in that we placed the eligibility standard on the same basis as the eligibility standards for NDEA loans, which meant a larger number of students will qualify to participate in the work-study program. This, again, extended the capabilities, insofar as cooperative education assignments are concerned.

As a third point, in writing the regulations for the program, we deliberately placed 99 44/100 percent of the responsibility for development projects with off-campus agencies on the participating colleges and universities. In fact, the Office and the Department did not attempt to monitor these arrangements and review contracts as might have been the case otherwise, but rather put the entire responsibility in the hands of the colleges in order to give it maximum flexibility with respect to this type of arrangement.

S. 1126 PROPOSALS

In the text of S. 1126, which is before the Congress, there is a new pattern of suggested amendments to make the program more flexible. One of the minor stumbling blocks that we have encountered in our effort to provide a better platform, for full-time employment, is that the law prohibits a student from taking one course of summer school if he wants to. We think this is an unnecessary obstacle, and have recommended the Congress clearly stipulate that there is such thing as full-time employment, and that a student may take one or two courses simultaneously.

In order to provide colleges which elect to move into these programs with some assurance of support capabilities in the future, there is a recommendation that the college work-study program be extended for 5 years beyond fiscal year 1968. This is up through 1973. We believe this will aid, and abet the notion of long-term planning.

Now, we have in S. 1126, a pattern of recommendations designed to augment and enhance the cooperative education programs. The language has been written on a very generalized basis in order to allow the Commissioner and his staff maximum flexibility with respect to operating regulations, and so on.

I will just attempt to describe this very briefly. What it says in effect, is this: An institution which receives a grant which now must go for 90 percent of student compensation, with the 5 percent administrative set aside for the off-campus program, and which at the same time elects to establish or extend a cooperative notion, may use a portion of that grant for overhead expenses, provided that in the course of expanding the cooperative education program, it places a number of students who are qualified for the work-study program on jobs in private sectors.

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Now, the idea behind this is simply to encourage a coordinated effort by using work-study funds to support jobs in the public sector where usually budgets are tight and there is not the capability, side by side, with an expanding number of job assignments in business and industry such as Jim Godfrey was talking about this morning. And, to the extent this broadens the program, the institution could use an undetermined amount according to the law, because in theory, we could approve utilization of half or two-thirds or three-quarters of this grant for this kind of staff support within the institution.

It is frankly a somewhat different approach than the more specific language contained in the amendments that are before the subcommittee this afternoon. But, I did want to make that point. And, my view, we come out the same way in the long run. It's just that we go at it a little differently.

INSTITUTIONAL SUPPORT FOR CO-OP PROGRAM

One more point, in terms of where this program is going, this year, or this summer, the institutions have indicated they will continue in or establish work-study programs, propose to contract with about 5,500 separate off-campus agencies across the United States. About half of these are agencies of government at all levels or to put it another way around, about half of these students who work off campus will be in the public service. Another third are in educational programs.

Now, these, for the most part, are short-term summer education activity jobs, working with the handicapped, remedial action, and some of the community action programs, recreational leaders, and that kind of thing. The remainder of them are spread in a host of activities that's so diversified I can't begin to tell you what people are doing, because they are doing virtually everything. But, this does indicate the direction this program is going at the moment. I think, if it is to be adapted more clearly to the notion of cooperative education, that institutions, obviously, must do much more work than they have in the past by way of structuring the job itself, and structuring the program as it exists off campus. There are some evidences in this direction.

NYC URBAN CORPS

Most of you probably are not familiar with the urban corps which was created by Mayor Lindsay and his staff in New York City a year ago last summer, which is a summer intern program in the public service in the city of New York. It involved about 75 colleges and universities last year, and some 1,500 students. They hope to move to 1,600 or 1,700 before the coming year. It is a sort of cooperative activity in the sense that a student who begins as a freshman may continue in subsequent summers up until his senior year. Then, as Mayor Lindsay has indicated to me, if this program is operated properly, this student will then turn around and go to work for the city of New York. It is quite obviously a manpower recruiting device, and I think one which may be very effective. The mayor believes he has a crying need, and I think he is right, for young, smart, capable college people in the public service of that city.

There are two or three of the States which have involved network operations which tie together 20 or 30 colleges in as many as a hundred local communities with jobs being established for children within the community even though the contracting college may be 100 or 200 miles away. Some of that work has already gone on here in the State of Oregon. There is a big project in Montana, to the east, involving a number of students and Indian tribal councils.

Those are the dimensions of the program. My own feeling is that from this point on, with recommended changes in the law, the ball is clearly in your court—by you, I mean the colleges and universities of this country, because as Dean Roush indicated so clearly this morning, the expertise on developing these programs doesn't reside in Washington. It resides out there in the institutions. Our problem is to make sure that the ground rules and regulations are sufficiently clear and simple so that innovation and exploration of new ideas and new programs and institutions may be enhanced.

I well remember the afternoon Dean Roush came to see me when the Economic Opportunity Act was not more than a month or two old with this idea. It made a great deal of sense to me, and great sense to him. I had to write a few new ground rules the next day or so, which we did. And, for my money, it is one of the very model kinds of things, especially in the teacher-training areas in the whole United States.

With those few comments, Senator, let me stop, because I think this has provided enough background, and turn it back to the other part of the hearing.

Senator MORSE. I want to thank you, Mr. Moore. May I say to the group, Mr. Moore intends to be available to you for directing questions to him as well as to other members of the panel.

Mr. Moore, Charles Lee, legislative counsel of the subcommittee, has suggested to me this question: Is not the main difference between S. 1126 and the language as introduced in the proposed amendment, one of financing, in that the amendment has a specific sum authorized to be appropriated?

Mr. MOORE. Yes, I would agree. This is one very fundamental difference in the S. 1126 language. We would deal only with the total appropriation for the program at whatever level that is set, which is $139 million, for next year. Under the amendment language, we would have to, I believe, make a specific line item budget request for this particular kind of authority, and take it through the hurdles of the Appropriation Committee.

Senator MORSE. Charles, why don't you present to him the figures of the amendment.

Mr. LEE. As I read the amendment, it authorizes $7,250,000 plus 10 percent, $725,000, a total of $8 million in excess of the work-study authorization.

Mr. MOORE. Yes.

Mr. LEE. If you will permit me to make a comment, sir, from the standpoint of colleges and universities, in this particular part of the program, it would occur to me, if they had a line item budget figure they can zero in on in communicating with their Senators and their Representatives, it might be helpful in identifying and getting this

particular item. This is one of the factors they might want to take into consideration in weighing the language of both variants of the amendment.

Mr. MOORE. I think this point is well made. The figures are based actually on some work which we did in Washington with Charles Probst last year in trying to arrive at what seemed to be a reasonable level based on this experience under the Commission program of the colleges and an average of roughly $65,000 or $70,000 a year per school seemed to make sense. That's the way we come up with this $7 million-plus figure.

Senator MORSE. We will move this chair over here, Mr. Moore, so you can share the mike with me.

Mr. MOORE. All right.

Senator MORSE. The hearing is now open to floor discussion under the rules I laid down this morning. Each person will state his name for the benefit of the official reporter, and either make such comments as he wishes to make or direct questions to any member of the panel or to Mr. Moore. I recognize the gentleman right in front.

STATEMENT OF DR. JOHN PHILLIPS, ASSISTANT TO PRESIDENT, LEWIS & CLARK COLLEGE, PORTLAND

Mr. PHILLIPS. My name is John Phillips, and I am asisstant to the president at Lewis & Clark College. Much of the testimony presented here today argues in favor of Federal support for cooperative education in order (1) to develop a better interplay between theory and practice in higher education, and (2) to improve the training of personnel to meet a variety of manpower needs within American society.

It occurs to me that these objectives may best be served by supporting programs which involve students from all economic levels, with the selection being based primarily upon background, interests, and qualifications rather than economic needs.

Yet the proposed amendment to authorize Federal support for cooperative education is presented as an expansion of the work-study program in which the primary criterion for participation is economic need.

Now isn't there a possible conflict here? Is it intended that the Federal support should be geared primarily to meet our general manpower needs, or rather, primarily to meet the economic needs of individual students?

Senator MORSE. As far as expanding it to include the cooperative education program, it is not the intention to limit it to the economic need of the student.

I think the testimony this morning made it very clear that it would be a very unwise policy to follow. I think what is needed is clarification of the intent. And we shall certainly see to it that that's done. Mr. Lee.

Mr. LEE. You suggest we get clarification in the committee report on this bill.

Senator MORSE. I think we've got to get clarification of the language. I think the point is well taken. I don't see how you can listen to Dr. Tyler and Vice President Dawson and Dean Roush and the others

without recognizing that certainly we don't want to limit this just to the economic need factor.

The next comment, in the back of the room.

STATEMENT OF DALE PARNELL, PRESIDENT, LANE COMMUNITY COLLEGE, EUGENE, OREG.

Mr. PARNELL. I am Dale Parnell, president of Lane Community College here in Eugene. I want to thank you for bringing the hearing to Eugene.

PRIVATE SECTOR USE OF CO-OP PROGRAM

The question I have, I would appreciate Mr. Moore or any of the panel members commenting on it. What has been the discussion or what is your thinking with regard to using work-study funds in private sector as well as in the public sector on the cooperative education program?

Senator MORSE. Would you respond to it first, Mr. Moore.

Mr. MOORE. I should have made this point earlier, but I slipped by it. We do have in the same set of recommendations, a request that the proprietary school sector, nationally accredited, or otherwise eligible, according to standards in the law, be permitted to operate agency or off-campus programs. Obviously, a profitmaking school cannot have a student under this program working for the institution, because it violates the nonprofit notion. That recommendation is here. If the Congress is disposed to act favorable on that one along with these other ones on cooperative education, the proprietary sector would be brought into this whole activity, along with the institution of higher education hitherto qualified.

Senator MORSE. Is there anyone else in the panel who wishes to comment? Vice President Dawson?

Mr. PARNELL. Mr. Chairman, just to clarify my question, I really was referring, not to monetary aid for the school, I had the work-study program in mind for payment to students when they work in private sectors. You mentioned this would be legal if they worked in private nonprofit sectors, but wouldn't be legal if they were working for industry, for example. I would just like to have someone on the panel comment on it.

Senator MORSE. Do you have anything, Mr. Moore?

Mr. MOORE. Well, except this suggestion was made, and was not incorporated in our pattern of recommendations this year. It was felt, at least in HEW there were too many complications involving Federal funds to pay for employment in the private sectors or in business or industry.

Senator MORSE. Vice President Dawson.

Dr. DAWSON. Mr. Chairman, I think this is a very important point, and one which has concerned us at Antioch College. I didn't say directly this morning, but I want to make it clear, within the Antioch student body, that we have a number of students who qualify for work-study on the Government program. For example, we have 40 disadvantaged students drawn from the lowest economic sectors of our society carrying out the program, and partly through private support

as well as through the office of Mr. Moore—Mr. Moore's office in terms of making this program possible for the disadvantaged student. We also have other regular students in our student body whose income is such that they can qualify for work-study.

The thing I want to point out is in terms of development of the cooperative program in the colleges. I think it works out much better if this can be integrated with a program for the whole student body as we were attempting to do at Antioch.

To go more specific to your question, we take a very strong position in our program that we do not want to use Federal funds for having students employed in private sectors, because we have long felt that students should earn their way, and they should be paid through the regular budget of both private and public sectors. As a matter of fact, if we have a regular job going with the U.S. Department of Labor, we do not use these funds for employing that student under the Department of Labor. We feel if they have a regular budget for that. I think this is very important and a very sound economic principle to keep in mind. And, we use the work-study funds only in the cases of the public agencies where they are using and creating jobs for students that are normally not covered in this regular budget. And I, for one, would think it would be a great mistake for us, because I think I am speaking—perhaps Jim Godfrey may have some comment also—it seems to me that it would be very easy to develop the concept among private sectors that they could get this employee paid for by the Federal Government. I don't think this would be very sound.

Mr. GODFREY. Excuse me; may I comment?

Senator MORSE. Yes.

Mr. GODFREY. I agree with you, Dr. Dawson. I think the tendency would be to make work assignments; that is, it would be a strong incentive for the private industry to say, "Here is some money that's available. We will make some phony jobs." And, this is not in the true spirit of cooperative education. I wouldn't want to have any part of this.

Senator MORSE. Any further comment?

STATEMENT OF DEAN GEORGE GLEESON, OREGON STATE UNIVERSITY, CORVALLIS, OREG.

Dean GLEESON. George Gleeson, dean of engineering, Oregon State University. I have two questions. The first question, I'd like to address to Mr. Godfrey. In your experience, have you had any yearlong student or longer than a yearlong student in the program as compared to the short-term student of 6 weeks', 6 months', or 3 months' period?

Mr. GODFREY. No, sir; we have not. It's always been 6 months that is generally the maximum single work assignment.

Dean GLEESON. Would you have any objection to a longer assignment?

Mr. GODFREY. I would like to reserve an answer to that. I think it possibly could be worked out. You are thinking of, perhaps, a way to get it started without this upsetting, perhaps, the normal curricular arrangement?

Dean GLEESON. No; I'm thinking primarily of the type of experience in which I would be interested, that a year's program is the least, I think, that a student could assume a position of some responsibility, to give them experience that he needs in order to mature to the point where he would have this chance to take his lumps in an industry that customarily are necessary.

Mr. GODFREY. Well, sir, I would agree with your length of time; but I think there is a lot to be gained by the breaking it up into shorter periods. Now, the period could get too short. I have the feeling that a 6-month period is more valuable from our standpoint than a 3-month period. But, we work both ways. I think there is a lot to be gained from the strict standpoint by the interweaving, the alternating; that is, to have the time at work to reflect on what is going on in the classroom or to apply it, let's say, and then conversely going back to school to reflect on his work experience, and get more meaning out of his academic work. I feel quite strongly about this. And, I think perhaps somebody else might have some idea on this subject too. I don't have any statistics or any study figures to back this up. This, however, is my personal feeling on the matter.

POSSIBLE CONFLICTS WITH OTHER PROPOSALS

Dean GLEESON. My second question is open to anyone. I note there is some possible conflict between H.R. 8175, the education for public service bill from the House, and H.R. 8234, Intergovernmental Manpower Act, in that it specifies under title I a work-study program also. I am wondering if there exists any conflict between the amendment proposed and these bills that are before the House?

Senator MORSE. What do you think about that, Mr. Lee?

Mr. LEE. Pending introduction into the Senate is the administration draft bill, which will come to the Labor Committee, on the Public Service Act. I would hope Mr. Moore would comment on that. It is an authorization, essentially to provide public administration training opportunities which would serve all levels of government, local, State and Federal. The Intergovernmental Act of which you spoke, is, I believe, going to the Post Office and Civil Service Committee, is it not, Mr. Moore?

Mr. MOORE. Yes.

Mr. LEE. The Intergovernmental Manpower Act is essentially an in-service Federal program for Federal employees. I do not think that as drafted there will be necessarily any overlap or duplication. But, would you like to speak on that, Mr. Moore?

Mr. MOORE. This is my understanding that in the Administration proposal at least when it was being framed, there were a number of proposals for specialized student aid program. By the time the final version was worked out and submitted through the Bureau of the Budget to the Congress, the direct student support program had been limited pretty much to the graduate level. With the act in being, our existing channels through work-study, NDEA loans and educational opportunity grants, if supported extensively enough, will do the job as far as the undergraduate is concerned. We didn't need more specific programs aimed at a specific area at the undergraduate level.

Senator MORSE. This is a very important question. And, I have a policy on this committee, when we have points such as this raised to do a little paperwork, assigning. I now assign to Mr. Lee the responsibility of looking into this matter and communicating with you as to his findings and receiving from you further comments that you wish to make in regard to the communication you receive from Mr. Lee. We certainly need to get this cleared up in order to avoid legislative conflicts that will have a very definite effect on whether or not we succeed or fail in getting legislation passed. I appreciate the question. The next question. Mr. De Bernardis.

STATEMENT OF AMO De BERNARDIS, PRESIDENT, PORTLAND COMMUNITY COLLEGE, PORTLAND

Mr. DE BERNARDIS. Amo De Bernardis, from Portland Community College. We have had considerable discussion concerning cooperative work programs at the engineering level. This is an area where work experience can be provided fairly easily. I would like someone on the panel to react to the problem of getting work experience started where organized labor is involved. At the community college level, many of our terminal programs are related to areas where apprenticeship is involved. Has anyone on the panel had experience in unlocking these doors?

Dr. DAWSON. I could speak to that point in a limited way, at least. In the late 1930's, this was a very serious problem in our program at Antioch College. In recent years, we have experienced practically no difficulty, partly because of the great abundance of jobs that are available in all areas of employment. And here again, your perhaps remember from the illustration I gave this morning, and I think President Flemming's comments sort of bore in this direction. There is a tremendous expansion of opportunities for employment in all areas of social service. The health field is expanding by leaps and bounds. Hospitals just hound us for students. We could place three times as many students as we have all the time. We have jobs which we just can't fill. And, we have not experienced any problem with the labor unions.

Now, I do want to go back to say that when you get into a tight labor market, then you are going to have some difficulty. And, I appreciate having an employer take on a cooperative student and turn off a man with a family, in other words. I think that's a real problem that you have to meet. Now, for a number of years, we have maintained or at least tried to develop understanding relationships with tops of all labor unions in Washington and other parts of the country, because I think top labor leadership recognizes the importance of keeping on training young people for responsible positions in our industry society. And, as a matter of fact, they are interested in seeing students trained to go into the labor movement.

So, you have a whole range here of interest on the part of labor unions, which are not going to fight this program provided they understand, and provided that the colleges and so forth are reasonable in not expecting them to employ students in critical depression times at the expense of their full-seniority employees.

Senator MORSE. I suppose in some instances, you may have had experience where you find problems develop over their apprenticeship

program, and you have to work out with them qualifications under this apprenticeship program; is that true?

Dr. DAWSON. Well——

Senator MORSE. That question has been raised.

Dr. DAWSON. Yes.

Dr. PROBST. May I add a brief word, Senator Morse?

Senator MORSE. Yes.

Dr. PROBST. It is of value to know that George Meany, and the top leadership of the labor movement is on record with the Senator's committee in 1964, in support of the expansion of cooperative education. And, Mr. Emery Bacon, who is a member of the National Commission has served as the educational leader for the Steelworkers of America. You know he was with the Steelworkers of America before he went to be assistant to the president of West Virginia University. And, there is a real communication with the top labor leadership, and they understand what this is all about. And, they are on record in favor of it, which helps in terms of dealing with the local group in talking with them about it and trying to resolve any problems.

Senator MORSE. Mr. Godfrey.

Mr. GODFREY. I would like to talk very briefly here. Our experience has been that we have had a very good relationship with the unions. The International Association of Machinists is our largest union in the company. We have, however, a sort of fixed number of students that we can hire into the normally represented classifications. And, up to this point, it hasn't been a real problem, because of the total number. But, as our program grows, we just can't use those students as we would like to in those jobs.

We are talking about the possibility of renegotiation when the contract comes up for renewal a year from now. So, we will see how this works out.

Senator MORSE. Next comment.

STATEMENT OF DEAN BYRON F. DOENGES, WILLAMETTE UNIVERSITY, SALEM, OREG.

Dean DOENGES. I am Byron Doenges from Willamette University. I have a question for Vice President Dawson. Have employers initiated any reform pressures?

Dr. DAWSON. First of all, I said we have had practically no pressures from employers. We get some pressures from students who have the contact with the outside world who feel more courses ought to be developed in the curriculum and who feel that makes more sense than what they see is needed in the outside world.

I want to go on and say that I think if you get to reach the chief engineers, general managers, and the people who are largely developing the policy within an industry or an organization—what interests me is that over and over again they are emphasizing the value of a general broadened education.

Taking the field of journalism, for example, a newspaper editor is going to say to a student and to the college coordinator, "Don't let your student overspecialize. We will give him that sort of training in the newspaper office. What we want is the young people who are fa-

miliar with the social sciences, who know something about sociology and economics and politics." Then, the techniques, they are less important. So, we depend—I think Mr. Godfrey can comment further on this—I think we tend to think that the industry and the business and the social service organizations of this country are our laboratory. They are teaching laboratory. They provide a great deal of the specialized information which no college laboratory or campus can provide; and they do it much better. I think the students get much more out of it than they do out of the same sort of thing tooled into a college course.

Dr. PROBST. May I add a word to that. Kalamazoo College is a very excellent example, which adopted cooperative education about two and a half years ago. I had occasion to have a plane trip with the president a few months ago from Detroit to New York; and, he was telling me about the following problems, which they appointed a faculty committee to deal with. The student comes back from their job experience and finds this experience outside in the real world is so interesting they become very discomfortable with the course, which was no complaint about the qualification of the teaching at this level or the incentive before they engaged in this program of off-campus work experience, which many of us are going to call experiential education, a mixture of experience education.

As you know, these Federal programs take the title "work-study." It took that label away, and they have taken cooperative education, and they have taken that away, and call it exchange of faculty in the institution. It's getting to be very difficult for us to make it clear to what we are talking about.

But, I would like to read a passage from a professor of economics at Antioch, in which he points this out very well. It's Professor Carl. He says:

> My first experience in teaching under the cooperative program gave me a shock. The student's considered abilities have been doing rather well in different work, and the beginning course in Economics. Upon returning from his cooperative job with the Department of Labor in Washington, he said to me, "I learned more from my job in Washington than I did in your course." This was not a tactful remark for a student to make. And, the boy's statement upset me at the time. But, were this student to return from a job and make a similar statement today, I would dismiss it by retorting, "Of course, you learn more on the job than you can in my course. Look at all the facilities in Washington, including the large number of economists to instruct you in the practical application of the subject." Moreover, the point I was trying to get the boy to see was that the cooperative job and his campus experience were on two different levels. His off-campus experience should prove stimulating; if in plans for his fundamental questions about our economic system; in a classroom, we are trying to develop theoretical analysis, to engage in sustained reading and see economics as an integrated role. The two experiences should complement each other and contribute to a more fundamental understanding of the subject.

Senator MORSE. The next comment or question.

STATEMENT OF MILES ROMNEY, VICE CHANCELLOR, ACADEMIC AFFAIRS, OREGON STATE SYSTEM OF HIGHER EDUCATION

Dr. ROMNEY. I am Miles Romney, vice chancellor, academic affairs, for the Oregon State system of higher education. I want to say we very much appreciate, Mr. Chairman, your bringing this hearing to Eugene, and giving us an opportunity to discuss these matters as we did last evening and here again today.

I first had contact with a cooperative education program some 20-odd years ago when teaching at Wayne University and the University of Michigan. I came in contact with it in the high schools in Detroit. I remember in particular, one Detroit high school in which a substantial portion of the high school was operated on a cooperative basis. If I remember correctly the amount of income earned by those young people, the principal told me at that time they were earning on the job annually more than enough to construct that high school each year. Beyond that, the more important benefit, of course, was the fact these young men had an incentive for learning that they would not otherwise have had. They had an alternative then of either going on to college after 5 years at Wilbur Wright or going on the job. They had the same experience that Mr. Godfrey referred to today. Many of those young men preferred to go on the job, and went right on the job they had been holding while in school or with the same kind of company. And, they had the jump on other people that were just starting.

We recently had a committee of college and university presidents in this State, which made a 2-year study of post-high-school education in Oregon, and issued a report in October, a 450-page report. Among the things which that committee of college and university presidents said about post-high-school education in Oregon was this: They felt that one of the areas which the colleges and universities of Oregon ought to examine very carefully in terms of meeting the needs of students, was this area of cooperative education. And, they referred specifically to the program at Antioch College as being typical of the kind of program they had in mind. And, this is one of the important recommendations that comes from those college and university presidents.

Now, I realize it has been indicated here that developing such cooperative program entails the development of curricula which tie in with both the campus experience and work experience. And, this, of course, requires commitment on the part of the faculty, and can only be developed if the faculty is willing and anxious to get into cooperative education.

We are much interested in this type of program. And, I hope very much that the moneys being sought from the Congress for this categoric purpose will be made available, because I feel sure that the expansion of this type of program here in this State would be speeded up considerably if it were possible to have some Federal funds for the purpose.

I want to ask one question if I might, Mr. Chairman.

Senator MORSE. You may.

Dr. ROMNEY. I will direct it to Vice President Dawson. You spoke of the need, which I think is very obvious, if this work experience is to have full meaning and full integration with the curriculum on the campus, that there be close contact with the campus experience and the work experience. I would be curious to know, in your experience, what proportion of the staff's time is required for supervision of a given number of students when they are out on the job as compared with the time given to the same number of students if they are on the campus? Did I make my question clear?

Dr. DAWSON. I think so.

Senator MORSE. May I interrupt long enough to thank you, Mr. Vice Chancellor, and ask you to submit to the committee a copy of that report of the presidents, not only because of its reference to the cooperative education program, but I think we can glean a lot of other information from it. I would like to have a copy of it.

Dr. ROMNEY. I will be very happy to.

Dr. DAWSON. Mr. Chairman, I am not quite sure if I got the question. I hope the questioner will ask it in another way. I can say first of all, as I was saying this morning, we have an extramural department that manages the experiences and the placements and the guidance program for some 150 students for the extramural director.

WORK OF EXTRAMURAL DIRECTOR

Now, that person deals with students both off campus and on campus. And, he is dealing with both groups at the same time. In other words, when he is in the field, he is visiting students around the job and employers and so forth. He is dealing with students in their work capacity. When they are based on campus, he is dealing with them in terms of their plans ahead. So, the same person is managing the students both on and off campus. I will pass the word about cost might be important. I will only give you a rough estimate. But, I think our budget for the extramural department runs about $175,000 a year out of a total of $3 million, which is roughly between 5 and 6 percent of the total budget that is spent. I think it is highly important that in developing a cooperative education program that money be put in to get a good staff, because in some way, this program is almost foolproof, because if it is poorly done, it is still a pretty good thing. It seems to me the quality of it depends a great deal on the quality of the staff.

CURRICULUM ADJUSTMENT

One other thing about the curricular adjustment I'd like to point out, it didn't come through clear in our discussions thus far. When we say adjustment in the curriculum, we mean several things. First of all, remember that if your student body is in the program totally, then you have to have a curriculum that will serve the student any time he is on campus.

In our program, we don't have a complete repeating curriculum. Our curriculum is for the fall and summer quarters. It has to be adequate so that a boy or girl in either quarter is going to be able to get a reasonable and regular course. This is very important. In that way, you have to change your standard to accommodate your two student bodies or your groups coming and going.

COORDINATION THROUGH STUDENT OF COURSES AND WORK

Now, there is one other very important point about the precise relationship between courses and jobs. Now, I think there is a false notion that in a cooperative college that you have to change all your courses so that they correlate exactly with what the student is doing. That isn't necessarily true. The integration has to come in with the student himself. We do not, in any way, attempt to have the student's course, par-

ticularly, coincide with what his job is at Lockheed or any place else. The curriculum goes right on, and the job goes right on. He is integrating between subjects. The same student may have a program course in psychology, in engineering and economics. He may be on jobs where he is going to get inner action in all those courses. It doesn't necessarily follow that student's curriculum has to go precisely in step with every kind of job he has in the program. As a matter of fact, you couldn't do that; it would be impossible. And, I think integration is on a much wider and broader front.

Senator MORSE. I have been thinking since you asked Mr. Godfrey the question about a 12-month program in comparison with a 6-month program. I was thinking about this problem, which I am not competent to answer, but you people can help me with it. It bears on this curriculum problem that we are now discussing. What about a 9-month program where they would be away for the 9 months of what we have heretofore talked about as a regular academic year, and then be ready to come back to school, shall we say in the summer, it may work out that way, and start then again. Is there any merit in the proposal of an academic year of 9 months, and then 9 months away in the cooperative work program?

Mr. GODFREY. I think that would have some merit. We do have—I probably should have added this a moment ago—we do have situations where we have a semester and a summer successively, which is almost the same period, say roughly 7½ to 8 months. Again, I am speaking strictly out of my own personal philosophy. I feel it is superior to have it woven into the total curriculum so that you get three or four or five separate and distinct work periods separated by school periods.

FLEXIBILITY DESIRED

Senator MORSE. I think it is very desirable that the law provide for that degree of flexibility that the institution needs in order to work out the program best suited to the curricular problem of the institution. This is preferable to our trying to freeze into the law a time bracket, so that unless the program conforms to that time bracket, funds are not going to be available.

I appreciate Mr. Moore's comment upon the desirability of this flexibility on the part of the Department. I can testify that I know it is their desire to transmit to the institution the maximum possible degree of administrative responsibility for educational policy. The Office of Education in turn in fairness to them, I should say, that they are sometimes limited by us on the Hill in their use of language that gets written into a bill on the floor of the Senate or on the floor of the House. This can occur when we don't have time to go back and get the expert advice we need as to the effect of the language. Floor managers are there on the spot. Frequently, it's a question of whether or not you are going to get the votes necessary to pass the total bill. And very often—you referred to some language here today in your comments—very often on the floor, you agree to something that seems to make sense to you only to discover later it wasn't as good as you thought it was. An illustration of this is the whole problem of accomplishing what we thought we had accomplished in regard to coopera-

tive programs without thinking about the 15-hour a week program. I gather the language adopted blocks you when you came to implement the very legislation that we had passed with a different intent, but not with an expressed intent. I won't bother the rest of the audience. But, that's why I made the comment that I made last night in my informal remarks on the importance of the speech on legislative history. There is where we need your help to see to it that before I stand up on my hind legs at the manager's desk and proceed to tell the courts in the future what the intent of the Congress was or the Department of Health, Education, and Welfare what the intent of the Senate was at the time, that you supply me with the accurate information I need as to the type of language that we ought to accept or reject at that point of the legislative process.

The next comment or question. I interrupted you.

Dr. DAWSON. I would like to comment on the length of the period, and support what Senator Morse has just been saying about not trying to fix this in any one particular period of time, and also to support what Mr. Godfrey pointed out about the difficulty in getting these periods stretched out too long. If you are starting a program, and you first talk to most employers, the first reaction is, "I can't use a student on a short period of time." So, the pressure from the employer is intended to push the period to a longer and longer length.

Years ago, we operated our program on a 5-week shift. It went very well. We have moved now to 3-month shifts. One of the things that you can do in a quarterly plan, you can have it flexible. Some of our students are on 6 months as well as 3 months. In other words, they can go either way. Occasionally, there are opportunities—I remember a student we had at Scripps School of Economics of San Diego, who had an opportunity to go to the Antarctic. In other words, he couldn't go down there on a 3-month trip. So, he took a year's leave of absence and went on this expedition.

We have what we call our plans on interim arrangements. In other words, we give students longer leave of absence when they have unusual opportunities that they could not get on a 3-month or a 6-month basis.

Senator MORSE. I am going to take advantage——

Dr. PROBST. Excuse me, I want to add a comment here. I think it is perfectly clear to all of you, we are talking about quite an elaborate administrative mechanism. It takes quite a bit of administrative elbow grease to put it into effect, far more than we will be able to deal with today. I think you should know that one of the services that the National Commission provides is a representative. In fact, Dr. Dawson has been on the west coast for about 2 months a year of the last 5 years meeting with educational officers, administrators and faculties answering questions like this. If there are any of you representing any institution that would like to have him come, we would be more than happy to provide him at your convenience and his convenience at no cost to the institution. This is one of the services which Dr. Tyler designed into the Commission when we set it up 5 years ago to encourage universities and colleges to begin the process of deliberation on this and thinking about it. You don't have to spend any money to begin the process of deliberation.

Senator MORSE. I think that is very helpful. I am glad you mentioned that.

Dr. William Loomis is our State Vocational Education Director at our conference. I want to give him an opportunity to make any comment he may wish to make in regard to the relationship of the things we have been talking about here today to the vocational work-study program. He will tell you if I don't, but I am going to tell you, then he can make comments on it.

The budget estimates this year for fiscal year 1968, proposes to eliminate some $10 million of vocational work-study money. And, I would like to have him make a statement for the record as to what he thinks the effect of that is going to be on the vocational work-study program.

STATEMENT OF WILLIAM G. LOOMIS, STATE DIRECTOR OF VOCATIONAL EDUCATION, DEPARTMENT OF EDUCATION, SALEM, OREG.

Dr. LOOMIS. Mr. Chairman, I appreciate the opportunity very much. My name is Bill Loomis, State director of vocational education, department of education.

We have had approximately 3 years now in Oregon to take advantage of the benefits of this work-study money from the 1963 Vocational Education Act.

The first year these funds were available the appropriation was made rather late in the summer and we hardly had enough leadtime to permit the high schools and community colleges to get geared up to take advantage of the program. In spite of this late start the funds were all utilized. The second year, we were oversubscribed some 50 percent. The third year such funds have been available, which is the present fiscal year, the allocation to Oregon has been reduced about one-third over the previous year, due to a reduction in the appropriation. As a result of this cut in the allocation, and the increasing demand for these work-study funds, the request for such moneys this year from local educational agencies is twice the amount available.

In checking recently with the high schools and community colleges in the State, we found that they will be in need of about $200,000 of these work-study funds for the 1967–68 fiscal year and they will have the local matching funds available. This would permit them to provide work-study assistance to more than 600 students during the regular academic year and about 250 students during the summer months. If Oregon were to receive the amount of funds necessary to meet this need, it would require an appropriation at the national level of double the amount available during the 1966–67 fiscal year.

It's my understanding that it is the intent of the administration to move funds from the 1963 Vocational Education Act appropriation to the Neighborhood Youth Corps appropriation for the 1968 fiscal year. In many instances in our State, the Neighborhood Youth Corps does not cover the same institutions, either community colleges or high schools that we do with vocational education. And, this is a serious problem with us.

I'd like to ask a question at this point if I could, Mr. Chairman. I am just wondering, does this proposed cooperative work-study edu-

cation money that would be available under this higher education statute cover both vocational-technical programs and college transfer programs if such programs are conducted at the community college level? If it does, and if we are short of work-study money under the Vocational Education Act, this at least might be one source to look for assistance for needy youth. I am sure our community colleges in Oregon would be equally interested in providing such aid to both our vocational and technical students as well as college transfer students.

Senator MORSE. Mr. Moore.

Mr. MOORE. That is a very important point involved here in all these programs, and specifically the work-study operation. We deal with an institution of higher education as an entity described under the statutes. Beyond that, we do not look at the kinds of programs within an institution. This is not the business of the Federal Government to begin to tinker with the curricular structure of institutions. In other words, if an institution, a community college secures a grant, any part of $65,000, the kind of curriculum the students were in would not be a concern.

Dr. LOOMIS. While I am on my feet, could I ask, what kind of criteria do you anticipate would be used in making grants for cooperative work-study funds under this proposed amendment to the Higher Education Act?

Mr. MOORE. The proposed amendment provides for an advisory committee to be made up of representatives of institutions of higher education and people skilled in this entire area, as has been the case in many other programs operated by the Office of Education. The criteria would be established primarily with consultation from this group. I couldn't begin to tell you what they are. Perhaps if we started here, the rest of the week, we could come up with them by Friday noon. But, this is the process we would follow.

Dr. PROBST. Might I speak to the point?

Senator MORSE. Yes.

Dr. PROBST. In making the point, I hope it will prove to be of some use to you, Senator, and to your associates in terms of explaining what could be done in this area of higher education in relation to the consideration which befalls—overwhelms the budget. Our suggestion and recommendation here in based on the fact that in 5 years' time, we have succeeded in doubling the number of institutions with this plan and the number of students. And, we receive reports from colleges and universities as to what the total earnings of the students are. This is a customary thing as part of keeping track. Northeastern University, for example, has almost 8,000 students, and their earnings are a total of $15 million. We total up the various institutions and their reports, and we come to a figure of approximately $95 million for the 56,000 students. Now, it is doubled what it was 5 years ago.

The particular amendment that we proposed here which would involve expenditure of $7 million to $8 million a year for 5 years, we are convinced would more than double the number of students and the amount of the cooperative education in the next 5 years over what it is now. Well, that would bring an additional 95 million to a hundred million dollars of students' earnings into the picture of paying cost of higher education. And, these students pay taxes. They are all in a bracket of having to pay taxes. And, our rough calculation is that after you have brought this about, the Federal Government would get

back something between $5 million and $6 million a year from this investment, enabling them to have an instrument at their disposal through the college to find educational related jobs.

So we hope, Senator Morse, when you and your associates are in the process of deliberation and dealing with arguments from the Bureau of the Budget, it will be possible to show them, "Here is an investment which brings back one of many multiple values and increase of input of productive labor within the economy of which income taxes are paid, which would meet the cost essentially of doubling this program."

Senator MORSE. We need data of that kind to help build up the record for the battle of authorization. I don't think there is any doubt about the fact we will have much less difficulty in reaching agreement on the substantive language of the legislation. The battle will be over and the authorization. And, that's where you people at the college level can be of greatest help to us in supplying us with data that leaves no question about the fact that it would be penny wise and pound foolish for us to fail to authorize and appropriate money that would meet the educational crisis. Further comment; in the back room.

STATEMENT OF ELMER DREVDAHL, DEAN, OCCUPATIONAL EDUCATION, LEWIS AND CLARK COLLEGE, VANCOUVER, WASH.

AGE REQUIREMENT

Dean DREVDAHL. I am Elmer Drevdahl, from Lewis and Clark College, Vancouver, Wash. I would like to express concern on the vocational work-study program about the 21-year-old age limit with the number of GI's that are coming back and going to school. Many of them are married and a good share of these people will be going into vocational technical programs. They will be over 21. And, I think we should look toward making them eligible for this kind of a program to help them.

Senator MORSE. Dr. Loomis, what do you have to say about that?

Dr. LOOMIS. Mr. Chairman, I think this is an excellent idea.

Senator MORSE. A little louder.

Dr. LOOMIS. I think this is an excellent idea.

Senator MORSE. Where did the 21-year age limit come from, from the standpoint of basis for merit?

Dr. LOOMIS. I don't know, for sure.

Senator MORSE. Do you know, Mr. Moore?

Mr. MOORE. I believe so. It was included originally to separate the vocational work-study, which is essentially secondary level oriented from the college program. That is the only argument I can recall that would support the age limit because we have no age limit in the college program at all.

Senator MORSE. But, time is already past.

Mr. MOORE. That's right.

D.C. TECHNICAL INSTITUTE

Senator MORSE. We battled with this last year in connection with the District of Columbia bill. We have been working for years to get a public institution of higher education in the District of Columbia,

including a technical institute for the District of Columbia. The District of Columbia is one of the few areas in the whole United States, or it was until we passed a bill last year, in which there is no public institution of higher education yet open to young people, particularly young people of low means.

The District of Columbia has a population larger than the population of 11 States in this country, a vital statistic many people don't know about. Although I have pleaded for it for years in the Senate. I have tried to get this type of an educational institution established in the District of Columbia for more than 12 years. You never know what causes a breakthrough, but we got it last year. We passed again my bill, in the Senate which usually became buried in the House committee. But, last year Ancher Nelsen of Minnesota joined with me and he said he thought he could get a bill through if we would have a 4-year college that would be academic on one campus and a technical institute on another. I said, "You get that through, and I will substitute it for the Senate bill." And, to my utter surprise, that is what happened. Now, the problem is to get them to start renting space and borrowing, during the week, Sunday school classrooms and using grounds of the Federal Bureau of Standards to get on with the job of getting the classroom space. We haven't succeeded with that yet.

But, this question in regard to the technical institute arose. And, I certainly think this suggestion is a sound one. Mr. Counsel, we'd better take a long look at that language and get an amendment drafted and have a hearing on it to strike the age requirement.

Next comment.

STATEMENT OF RICHARD EYMANN, LANE COMMUNITY COLLEGE, EUGENE, OREG.

NEED FOR UNIFORMITY IN REPORTING REQUIREMENTS OF WORK-STUDY PROGRAMS

Mr. EYMANN. I'm Dick Eymann of Lane Community College. Just to comment briefly on the previous discussion, then I have another point I would like to ask about. The age is not the only difference between vocation work-study and college work-study. There is a difference in the amount of hours they can work. So, when you have a student in your school under the vocation work-study and another one under the college work-study, the college work-study will permit any student of the community college, including his occupation, to qualify. But the other money received for vocational work-study is limited on hours and age.

A further suggestion, it might be well to look into the language in both of these and make them uniform so we don't have to be so concerned about checking in the record to determine whether it's an occupational student, getting his records from occupation or from vocation work-study. And, we don't have to keep the same records if he is a vocational student, but getting a college work-study grant.

Senator MORSE. Any comment on Mr. Eymann's views?

This leads to another assignment for Mr. Lee. I certainly want him to prepare a memorandum on it. You got to help him prepare a memo-

randum on it and see if we can get it reviewed before we pass legislation in the committee.

Mr. LEE. We could also ask Mr. Moore.

Senator MORSE. You are my seminar student, and I always assign written assignments. You prepare a written memorandum.

Mr. MOORE. We do the term papers.

Mr. EYMANN. This leads to the other question I was going to raise; that has to do with two programs that have the same objectives, to a degree, at least that train people in the work situation. One is work-study through a cooperative educational program generally, except the work-study is limited to the public sector. The other program that exists is the on-the-job training program for the Department of Labor which again has the objective to get people into a work situation and learn that particular trade or that occupation and continue with industry.

The difference in the administration rule that exists, depends where you get started. If you get started from an academic institution or an educational institution, you go the work-study route or cooperative education route, except you can't work in private sectors under the present law.

ON-THE-JOB TRAINING VERSUS WORK-STUDY

I was pleased to hear that private sectors might be guilty of making work situations, where people employed in public sectors don't fall into that trap. I doubt that to be true. But, in the case of on-the-job training, the trainee or the person does not begin with an academic institution. The person is strictly unemployed or seeking employment, and is placed in an on-the-job training situation with industry. And, not only is the administration of that paid for 100 percent by the Federal Government, but also the person's wages during that time is paid for by the Federal Government; and it doesn't make any difference whether it's with a public sector or private sector.

I am wondering here, we've got the same objective in two programs, and we are going two different routes. I would like to have the panel comment.

Senator MORSE. Any comment?

Dr. DAWSON. I am not sure I can make a satisfactory comment. I agree that the confusion and ambiguity between these two programs should be clarified. I am not familiar enough with the Labor Department program really to comment.

Could you direct your question a little more specifically so I could comment?

Mr. EYMANN. Well, on-the-job training person, as I understand it, does not need to be attending an educational institution. So, he is selected, and a contract has been arranged through the local agency or the government unit or school, whatever it is, that person can be placed on a job, and go through a training program. It doesn't make any difference whether it is a private sector or public sector. In this case, it is perfectly all right to work in the private sector and have the industry receive the money for his wages and training. I know they argue that dollars invested this way in private sectors, if you train this person, he is going to pay his freight in 2 years in taxes.

I am wondering, in the work-study and cooperative educational program, whether we should be training, regarding the private sector. The important thing is to get the person employed in whatever his occupational intentions would be. You almost would have to go to the private sector to find the work situation that he can be trained in.

Senator MORSE. I think, Dr. Dawson, I can help Mr. Eymann with this. We do have a Federal Inter Agency Committee on Education chaired by Dr. Miller, the Assistant Secretary of HEW (Education) and, I am going to ask Mr. Lee to copy out of the transcript your comment, Mr. Eymann, to submit it to the Committee and to ask them to review it for us, and give us their comment. Paul Miller, I am sure, will be very pleased to give us whatever help he can.

Next comment.

STATEMENT OF A. O. STROMQUIST, ASSISTANT VICE PRESIDENT, U.S. NATIONAL BANK OF OREGON

Mr. STROMQUIST. I am Al Stromquist from the U.S. National Bank. I'd like to comment on cooperative education from a slightly different viewpoint. I think in a sense, most of the college representatives here today have participated in cooperative education programs through a program that our bank started in 1950, in which we started a program of recruiting at the high school level and bringing young people into the bank, and they would work a year, go to college a year, and do this on an alternating basis.

However, the initiative, of course, has been with the company rather than the school. And, the choice of the school lies with the students rather than the schools coming to the student.

We worked very closely with Dean Victor Morse at the university, Dean Mason and Dean Goddard. They helped us start this program in 1950. When it was started—over the years, we have brought in over 300 young people into this program. We provide this work experience, and in addition, a scholarship fund; we pay the tuition for them.

In answer to some of the questions that have been raised here—the thing that we have learned through experience over the years is that the alternating years does work. They are in college on a 12-month basis.

What Dean Dawson has said, and I agree too, one of our problems has been to find adequate summer school offering. This can be a real problem. But, it is a way of accomplishing this job. As I say, we have been in this for a number of years.

I also want to underline what you said, Senator, I think we must retain flexibility to give us room to continue a program of this nature. And, I think it must have the flexibility as to time, because a year, 12 months, has worked out for us. Although we do need to make adjustments with the school from time to time, various developments in transmitting of credits and so on.

I can testify to the value of cooperative education, and give evidence to every point that Dr. Tyler made this morning. And, there was one point that Mr. Godfrey made is perhaps the aircraft companies from the Northwest may look to California, but we have banks from California going after our people on this program here at a higher salary offer than we can make for them.

Senator MORSE. That is a very helpful report. I am glad you made it. Counsel will be in communication with you for more information, because I think this ought to be pointed out. The next comment.

STATEMENT OF MRS. MARIAN COSGROVE, MARYLHURST COLLEGE, MARYLHURST, OREG.

Mrs. COSGROVE. Mrs. Marian Cosgrove, Marylhurst College.

Do we understand correctly that the only prohibition against placing students in private sectors would be that their salaries would not be helped by this money, but that it would be possible to use this money for administration at the college level for a mixture of private and public sectors?

Senator MORSE. Mr. Moore.

Mr. MOORE. Yes.

Mrs. COSGROVE. And second, could we ask the committee who reviews the rating to look carefully at changing the wording in the college work-study provisions to the extent that it might mean then that one group of students would have access to two kinds of work-study money which might then cut down the work-study money for those who are purely in the college setup? This could happen, too.

Senator MORSE. Mr. Moore.

Mr. MOORE. The answer to the first question is "Yes." It is clearly the intent of the amendment that the grant funds in support of staff would be used for capabilities looking at both sectors, public and private.

On the second question, this is a perennial problem with programs at essentially two levels which come together in a single institution. We find, for instance, our Neighborhood Youth Corps programs operated by the Department of Labor, are in junior colleges, along with work-study programs which we operate. We try our best to keep these in some kind of harmony. It is often quite difficult.

Senator MORSE. Thank you very much. I will have Mr. Lee communicate with you any further information you need. This is a very important problem that you have raised. I can't answer it on the technical ground now. It seems to me, as far as possible conflict between programs, that's got to be worked out closely between suppliers of money and institutions involved. Next comment.

STATEMENT OF FREDERICK D. KRAMER, CONCORDIA COLLEGE AND HIGH SCHOOL, PORTLAND, OREG.

Mr. KRAMER. I am Fred Kramer, Concordia College and High School. I would like to address my question to Dean Roush. Did I understand correctly this morning that under the existing work-study legislation, you are placing educational students into local school districts, and that presumably they are working 40 hours a week for a quarter or a semester, and presumably 90 percent of this money is coming from work-study funds, and the other 10 percent from school districts?

Mr. ROUSH. Everything you said is correct except the university is paying the 10 percent and not the school district. In other words, we want to prove something in our area of the country. We want to do

some research. Some of them involve a new sequence in professional education. We want to see just what kinds of tasks youngsters could perform effectively for teachers with different kinds of preparation. And, so we only assign these approximately 100 youngsters in one school system normally, and all the tabs are paid for at the school. We are hoping that in doing this, that the school will recognize the value of the program, and eventually be able to take over the payment of the staff.

Now, we voted this proposal and the project in 1960. And, we tried to get foundation money; we tried to get U.S. money; we tried to get the State legislature interested in it. To make a long story short, 5 years later, Mr. Moore helped us get it started. It was the only way we could get going. We hope to prove enough things so school systems won't think we are robbing teacher to pay Paul when they pay for one of these co-op students.

Now, it depends on how a State finances its education in the State. If they use money to pay the cooperative student, they would, in fact, be taking that money from teachers' salaries. Of course, I don't know a better way to kill a program that that.

Mr. KRAMER. You are hoping that the school district will take over the entire stipend?

Mr. ROUSH. I hope so. I think that is something that is down the road a piece. I described the way we are financed in New Mexico with regard to teacher salaries.

Mr. KRAMER. The next question is to Mr. Moore. Can you see this kind of program developing in any State where colleges could use the work-study money in this manner?

Mr. MOORE. Yes, sir; as long as the students who are in the program have been determined through the financial need assessment practices of the institution to be eligible. From that point on, the law is very very broad with respect to these contract arrangements between the universities and the agencies.

Mr. KRAMER. You say public agencies. Could a student be placed in parochial schools as long as they were not involved in teaching of religion?

Mr. MOORE. Yes, sir. There are two technical prohibitions in the law governing restrictions on the work. But other than that, the same point, the contract can be made with private institutions.

Senator MORSE. Dean Roush.

Dean ROUSH. Mr. Chairman, may I make just one short statement? I have some real concern with whether we will be able to finish the experiment, because, as you may know, the law automatically, unless there is a change made by the Congress, goes to a 75–25 matching. And, if this occurs, I don't know whether the New Mexico Legislature and my institution will be able to match that 25 percent. And I don't know if I can get the public schools to help. This is a danger. And, I want to say, I certainly hope something can be done about that.

Senator MORSE. Remember this morning, I said that I had been in conversation with Chancellor Lieuallen. That was the very point we had been discussing. I didn't name it this morning. I was not one that favored that cutback. I am very careful not to make false promises that I think might turn out to be false. All I can do is express hope.

There is nothing wrong in that. My hope is that we can get some reconsideration. I think that was a great mistake, I think we ought to go back to the other program.

Next question.

STATEMENT OF E. C. McGILL, DEAN OF FACULTY, SOUTHERN OREGON COLLEGE, ASHLAND, OREG.

Dr. McGILL. I am E. C. McGill, dean of faculty, Southern Oregon College, Ashland, Oreg. I want to testify on this point, because if we were to move to 25–75 percent matching basis, then on down the road further, under our present financial situation, we would be forced to actually cut back on the number of students that could be involved in this program, and thus defeating the real purpose of the program. So, I would like to urge that every consideration be given possible to holding to the present level of matching money rather than increasing the amount of money the institutions must actually contribute.

Senator MORSE. That is exactly what the stack of protests we have already received support. May I quickly say, if you think writing to Members of Congress doesn't pay dividends, you couldn't be more wrong. I don't know why so many of you didn't develop writer's cramps. You put the communication to good use when you sit in my position. This type of information is what we need if we are going to succeed in reaching the end that I think we ought to reach.

Senator MORSE. Thank you very much. I shall take two more questions before I adjourn the hearing. Is there any other question or comment?

If there are not any, I want to say for the record, without even thinking about listing any names, or groups, the subcommittee deeply appreciates the record you have made this afternoon. You will be surprised at the beneficial result that I think this record is going to produce. I want to particularly thank the panel and Mr. Moore for your contributions.

Let the record show that the record will continue to remain open for receipt of supplemental statements, not only by those that have already participated in the discussion, but any of you that have attended the hearing. We need all the assistance from you that we can get. I hope I have succeeded in one thing, and that is to get across the point of view that we sit there as your legislative counsel. And we can be of no more help to you than your willingness to help yourselves by giving your counsel the facts. I can't be of any help to clients in the private law practice if he doesn't give me all the facts. If he only gives me part of them, then my legal advice in the long run may not be in his best interest. But, if you give us all the facts that you can, we will be in a position to serve you as your legislative counsel to help with a common concern, and that is to meet what I mentioned before is a very serious educational crisis that faces us in this Republic if we are going to carry out what I have described as our trusteeship obligation to the next generation of young Americans.

At this point I will insert in the record material from various constituents who were unable to appear in person.

(The material referred to follow:)

PREPARED STATEMENT BY DR. PAUL A. MILLER, ASSISTANT SECRETARY FOR EDUCATION, DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE, WASHINGTON, D.C.

INTRODUCTION

Several years ago Northeastern University extended its cooperative education program to include job assignments abroad as a result of opportunities presented by a number of major United States based firms having substantial foreign subsidiaries. The program has proved to be singularly successful; and hopefully, it can be expanded to include many more students in a broader spectrum of foreign countries. The institutional development provisions of the International Education Act will help to bring about this expansion at a much earlier date than would otherwise be possible.

As a matter of institutional philosophy, Northeastern University enthusiastically endorses the work-study provisions of the Act as being a particularly viable means of supplementing classroom instruction with actual face-to-face interaction with the people of foreign countries. The objective of this paper, therefore, is to briefly summarize the advantages of cooperative education as a unique educational process offering unusual potential in the field of international education.

ADVANTAGES OF COOPERATIVE EDUCATION

With the emergence of many new higher education programs of an interinstitutional nature, the term "cooperative education" has come to take on multiple meanings. To avoid confusion, it seems advisable to briefly define the term as it is used in this paper. Cooperative education refers to that educational plan which integrates classroom instruction with practical work experience in industry, business, government, or service-type work situations.

The work experience constitutes a regular and essential element in the educative process, is closely monitored by institutional faculty, and is considered an important requirement for the granting of either an undergraduate or graduate degree. The work assignments are carefully planned and supervised in fields related to the student's academic discipline and career objectives so as to maximize their educational value. In addition to providing a unique supplement to classroom instruction, the job assignments also provide income which can be used to substantially defray educational expenses.

It is generally conceded that every profession, whether it be engineering, pharmacy, nursing, or political science, contains certain knowledge elements that cannot be taught in the classroom and which are accessible only through actual work experience in the "real world". This is particularly true in the field of international relations if the student is to gain accurate insights into the industrial, social, political, educational, and professional makeup of foreign cultures. While classroom instruction in language, cultural heritage, and the mores of a foreign country is essential, the real learning process is not likely to take place until the student actually interacts in a productive and meaningful way with the people in question. This position is based upon the premise that the educational process is more complete in a productive work situation than would be the case if the student merely toured or studied abroad. Coincidentally, there are many United States based firms which need trained manpower to staff their foreign subsidiaries. It is very likely, therefore, that appropriate, paid work assignments can be arranged which will provide considerable financial support for the student's academic program and day-to-day subsistence.

As is the case with domestic cooperative programs, these foreign job assignments will be closely monitored by faculty members so that upon the student's return to the classroom the course content would be responsive to his personal experience abroad. Therefore, cooperative education in international personnel training shows promise of being extremely effective from an educational point of view and largely financially self-sustaining since a major portion of the funds would come from the private sector. Under this program, the federal government could stimulate, at minimum expense and with the shortest lead time possible, the involvement of a large number of students drawn from those institutions already operating under the cooperative plan of education.

CONSORTIUM OF COOPERATIVE INSTITUTIONS

While cooperative education had its beginning at the University of Cincinnati in 1906 and at Northeastern University in 1909, it has rapidly grown in popu-

larity over the past ten years; and at the present time, 109 institutions have adopted this educational plan either for all or a major part of their student body. Much of the expansion of the program has been due to the efforts of the National Commission for Cooperative Education and the Ford Foundation, which have been instrumental in developing the Center for Cooperative Education at Northeastern University. The Center, under the direction of Roy L. Wooldridge, Vice President and Dean of Cooperative Education, was established in 1965 under the auspices of the Ford Foundation to provide consulting service to academic institutions of higher learning who wish to convert to the cooperative plan. Dean Wooldridge is also the Director of Consulting Services for the National Commission for Cooperative Education and a consultant to the Ford Foundation.

Because of Northeastern University's position of leadership in the field of cooperative education and the close working relationships which have been established between cooperative institutions over the years, the establishment of a consortium of such institutions would be a natural outgrowth of present activities. Through such a consortium, the necessary planning, course development, job placement activity, language and cultural training programs could be effectively used by all institutional members. As a consequence, the federal investment that would be necessary to plan and organize a center for international study at any one institution could be effectively utilized by institutions in the consortium—with an exponential effect on the number of students involved.

PRELIMINARY PROPOSAL OUTLINE

In view of the tremendous success of cooperative education in the United States and the increasing enthusiasm with which it is viewed by educators throughout the world, Northeastern University is beginning to explore the means by which cooperative education can be most effectively utilized in the field of international training. The faculty and the Board of Trustees have long been interested in international education; and in one college, Business Administration, a Faculty Advisory Committee has been operative for several months.

The University proposes to establish a Center for International Study which would coordinate future Faculty Advisory Committees in several additional colleges; for example, Liberal Arts and Engineering. The task of the Center and the Faculty Committees would be to accomplish the following objectives: to assess the role of their respective colleges and subsumed disciplines in a program of international study; to identify necessary and/or preferred modifications to the curriculum; to define the potential role of the faculty; to determine the optimum size of the program and the extent of student involvement in the planning phase; and through the Cooperative Education Department to explore the conditions and limitations of job placement abroad. This latter activity would involve extensive discussions with the immigration authorities, industrial organizations, and academic institutions abroad to provide for the appropriate placement and supervision of students during these work assignments.

These committees would constitute a first step in perhaps a year-long program to plan for the significant increase in the number of cooperative students assigned abroad. It is further proposed that this planning activity encompass the design of a mechanism under which a consortium of cooperative institutions might be organized.

As an integral part of the planning phase, appropriate training programs, new courses and course materials would be designed to properly orient both student and faculty participants. An effort would be made to involve faculty specialists from a number of universities so that resulting programs and materials could be used broadly by members of the consortium.

POSSIBILITIES FOR EXCHANGE

While not emphasized in the preceding material, it is expected that there will be ample opportunity and good reason to arrange for student and faculty exchange with sister institutions abroad. For example, Northeastern University is currently cooperating through the Massachusetts Partners of the Allianee in placing students from Colombia, South America, in appropriate work assignments in Massachusetts. These students are currently upperclassmen in the Escuela de Finanzas y Administration in Medellin, Antioquia, and are working on the cooperative plan of education similar to that described earlier. As this program

develops, it is quite possible that they will undertake a course of study during their work assignments in this country.

Further, the University is currently offering a specialized Master's Degree program in Water Systems Control for a group of students from Pakistan who are seeking not only professional training but appropriate work experience in their field of study in this country. This program is sponsored by A.I.D. and provides work assignments with sanitary engineering firms such as Camp, Dresser, and McKee, which are under contract with the Pakistan government to provide engineering consulting services. It is expected that this type of program will expand in the future as has been proposed in the paper prepared by Dr. John Cochrane to be delivered before the international symposium on Water for Peace in Washington later this month.

ABOUT NORTHEASTERN UNIVERSITY

Northeastern University, one of the nation's largest privately-controlled institutions of higher learning, is the only university in the United States and the largest in the world wholly committed to the cooperative plan of education in its full-time programs of study. All of its eight undergraduate colleges and many of its graduate programs operate on the cooperative plan. Total enrollment, including both day and evening students, is approximately 36,000. Of these, some 12,000 are full-time undergraduates.

Northeastern has pioneered in the development of a wide range of job opportunities for its students. Twenty-one faculty coordinators are responsible for locating job opportunities, placing students, and providing guidance and counseling. The upperclass "co-op" students at Northeastern are assigned as trainees in more than 1,800 organizations, including industries, commercial organizations, government agencies, health agencies, and libraries, among others. Contacts with these organizations have been establishde and developed over nearly sixty years of the University's operation. As the foreign trade commitments of many of these organizations have expanded in recent years, they have spontaneously expressed serious interest in the placement of our students in their facilities abroad. While the vast majority of foreign placements to date have been made in English-speaking sectors of the world, many more opportunities in Spanish and French speaking countries could be made available, assuming language and cultural orientation barriers were overcome.

Further, a number of these organizations are participating with the University in arranging foreign students to undertake work assignments under the cooperative plan in this country. Therefore, in these instances a two-way interchange of students could be productively arranged.

There is little doubt that the placement of cooperative students abroad and/or providing work assignments for foreign students in the United States involves greater complexity than would a wholly domestic program. Nevertheless, the experience of the cooperative education faculty, the enthusiasm of the faculty and students, and the excellent relationship that the University has achieved with industry have led us to the conclusion that the potential impact of such a unique educational experiment would far outweight the administrative difficulties involved.

OREGON STATE SYSTEM OF HIGHER EDUCATION,
OFFICE OF THE CHANCELLOR,
Eugene, Oreg., May 1, 1967.

Hon. WAYNE MORSE,
U.S. Senate,
Washington, D.C.

DEAR SENATOR MORSE: It is my hope that the Congress will decide to postpone the scheduled shift in the matching formula for the work-study program as amended by the Higher Education Act of 1965. Moving it to the higher percentage of state matching would have serious implications for the State System of Higher Education inasmuch as the budget under consideration by the 1967 Legislative Assembly does not provide any additional matching money to enable us to support our program under the proposed revised formula.

The work-study program has enabled hundreds and hundreds of Oregon students to remain in college who would otherwise have found it impossible to attend. It is an excellent program and I would not like to see the benefits to Oregon students diminished by our inability to provide the matching requirements.

Your assistance in retaining the 90 percent-10 percent Federal-State formula will be deeply appreciated.

We are grateful to you for coming to Oregon last week and thus permit us to participate in shaping the cooperative study proposal now under consideration by the Congress.

Most sincerely yours,

R. E. LIEUALLEN, *Chancellor.*

PORTLAND COMMUNITY COLLEGE,
Portland, Oreg., May 4, 1967.

Hon. WAYNE MORSE,
U.S. Senate,
Washington, D.C.

MY DEAR SENATOR MORSE: I want to express my appreciation for being asked to appear at the public hearing in Eugene. It is always a pleasure to see you in action. It gives one great satisfaction in the democratic process. The hearing was most interesting and I know that through the committee and your leadership, the legislation for cooperative education will become a reality.

The cooperative education program would be a most useful one for Portland Community College, as it would give students in the terminal programs a realistic contact with industry. As you know, the majority of our students are in vocational and technical programs, and they need this type of education. Also, in technical programs, it is impossible for a school to keep up to date on equipment and procedures. By providing a cooperative educational program, we can use the up-to-date laboratories of industries for our educational programs. In addition, the cooperative educational program makes it possible for students to earn while they are learning. In this way they also get a better insight into the American system of production. At Portland Community College we have explored the cooperative educational program and we do have a semblance of it in some of our areas. However, we have never been able to move it along as fast as we would like. Legislation such as proposed will be the catalyst which will make it possible for us to expand the program considerably. If there is anything else I can do to assist you in your work on this matter, please feel free to call on me.

Under separate cover I am sending you some materials on Portland Community College and its programs. I know you will be much too busy to read them; however, they might be helpful as a reference on community college programs for your staff.

Your speech at the National School Boards Association was timely and I could not agree with you more. Far too many people seem to be blind to this issue of federally operated schools. There is no question in my mind that local schools given the adequate funds to meet the job ahead, can be responsive to the needs of the community and the nation at large. Our problem has been one of not being able to get enough local funds to do the job. Personally, I do not believe that federally operated schools change the answer to a dynamic and creative educational program. However, I do feel federal funds can be the catalyst which helps local communities to explore new avenues and approaches to educational problems. I commend you for your effort on this issue.

Sincerely yours,

AMO DE BERNARDIS.

STATE OF OREGON,
EDUCATIONAL COORDINATING COUNCIL,
Salem, Oreg., April 18, 1967.

Mr. PAUL DELKER,
Director, Community Services and Continuing Education,
Office of Education,
Department of Health, Education, and Welfare,
Washington, D.C.

DEAR MR. DELKER: The Oregon State Educational Coordinating Council has instructed me to express its concern with the provisions of 173.21(a) of the Regulations for Title I of the Higher Education Act of 1965 relating to the reduction of federal financial participation for the fiscal year 1968. It is our feeling, as expressed by the institutions of higher education and the communities, that the reduction of federal financial participation to fifty percent is premature for the following reasons:

1. That the institutions of higher education have not had adequate time to adjust to the fifty percent need for local share in fiscal year 1968.
2. That institutional participation in community service generally has been slow and will be deterred even more should local share requirements be too much of a burden on the institutions of higher education who wish to participate.
3. That institutional resources for community service have not, as yet, been properly assessed as a basis for participation.
4. That community leaders, associations and organizations have not had sufficient time to relate the institutional resources to their community problems and to encourage institutional participation.

The Educational Coordinating Council therefore recommends that the federal financial participation of seventy-five percent be extended through fiscal years 1968–1969.

Sincerely,

BEN LAWRENCE,
Executive Director.

ECONOMIC OPPORTUNITY COMMISSION
OF SANTA CLARA COUNTY, INC.,
San Jose, Calif., May 3, 1967.

Hon. WAYNE MORSE,
Senate Office Building,
Washington, D.C.

DEAR SENATOR MORSE: I read your recent session on Work Study Co-operative Education as a basis for a new bill, Higher Education Amendments of 1967 (Morse).

Enclosed you will find a description of a program similar in philosophy called the Business Educational Assistance Service. The BEAS program has been conducted by the Small Business Development Center of Santa Clara County, San Jose, California, in co-operation with Stanford University, Santa Clara University, San Jose State Graduate Schools of Business for two years.

As Senators Hartke and Hill have remarked, the work study philosophy does develop "character" and is truly an "innovation".

I would certainly appreciate your proposed legislation containing enough "elasticity" so that resources could be available to Graduate Schools of Business throughout the nation to expand the BEAS philosophy; that is:

1. Participation in the decision making and problem solving process for the qualified and mature graduate student in business.
2. Meaningful assistance to the needy, small businesses of the nation.
3. Active demonstration of the real benefits of the Business Education community in rendering public service.

The present BEAS program is extremely successful and has both business and community support; but it is one of several on-going programs of the SBDC and must, therefore, share limited resources. The students are all volunteers and give their time unselfishly, although they are as needy as any other student.

The SBDC is not selfish about the BEAS program and would gladly defer to another sponsor, especially an educational institution. The SBDC's only concern is that the BEAS resource remain available.

I would appreciate your comment and assistance regarding the BEAS.

Sincerely,

JOHN K. LOPEZ, *Treasurer,*
American Association for Small Business Development.

CENTER FOR ADVANCED STUDY IN THE BEHAVIORAL SCIENCES,
Stanford, Calif., April 11, 1967.

Mr. JOHN K. LOPEZ,
Business Consultant,
Small Business Development Center,
San Jose, Calif.

DEAR MR. LOPEZ: Thank you very much for your letter of March 29 with its description of the BEAS program of the SBDC of Santa Clara County. I am sure that this will be of interest to members of the National Commission for Cooperative Education and I am hastening to send it to the Executive Director of the Commission, Mr. George E. Probst, 52 Vanderbilt Avenue, New York City.

I am testifying before Senator Morse's committee on April 26 in the hope that we can get some new legislation that would allow for educational institutions sponsorship of programs such as BEAS.

With best wishes,

Sincerely yours,

RALPH W. TYLER, *Director.*

SUMMARY PROPOSAL FOR SMALL BUSINESS EDUCATIONAL ASSISTANCE PROGRAM

(A PROGRAM OF THE ECONOMIC OPPORTUNITY COMMISSION OF SANTA CLARA, COUNTY, INC.)

SMALL BUSINESS DEVELOPMENT CENTER, SAN JOSE, CALIF.

GENERAL

Looking ahead

"We are a nation of small businesses. As we look into the future, will we remain so? There is every likelihood that we will. The very large businesses will continue to grow, but the number of units in the small businesses category will steadily advance. Some estimate that in twenty years the number of small businsses in operation will increase by 1,000,000.

"The population growth will call for many new services. Technological development will bring into being thousands of small units. There will be many men in new businesses dealing in products that do not even exist today.

"Human nature being what it is and the normal trading risks being what they are, there still will be obstacles to success, even in the bright future. But we can learn the basic rules from those predecessors who have faced the pitfalls and who know how to avoid them." (Dun & Bradstreet, Inc.)

We are, indeed, a nation of small businesses; 95% of the businesses in the United States of America are small operations.

California's percentage of small business operations is believed to be above that of the national average. This is due to the rapid growth experienced by this state and its subsequent attractiveness for new entrepreneurs.

But among the small concerns of California, over 20% will have discontinued by the end of the year. Discontinuances are the result of many things; poor health, family problems, the lesser responsibility of other emplyoment, failure and bankruptcy.

It is the latter category that should concern anyone responsible for the welfare and development of a healthy economy. For small businesses and dominant businesses, through their interdependence, are the backbone of our free enterprise system.

It is at the small business level that the reality and true meaning of free enterprise and opportunity is effectively communicated to our society. This is vividly illustrated by the ample research into problems of monopoly and big business, as contrasted with the ideal of the individual citizen that *the local small business is the cornerstone of our free enterprise democracy.*

These small businesses are a definite factor in the well being of the rapidly expanding United States economy. They are obvious resources, not only in terms of community supporting tax revenues, but as a symbol of the opportunity every government must offer its citizens.

NEED

Experts in the field of small business have indicated that 90% of small business failures are due to *management incompetencies* and insufficient starting capital. This results in a tremendous waste of resources and investment, to both the community and the individual. *These losses can be alleviated!*

The American system of free enterprise is based on free entry and opportunity into the economic marketplace; unless we are to establish governmental licensing and examination requirements for all new and existing business enterprises, thus screening out possible unsuccessful ventures, we must accept the fact that all individuals have the inalienable right to attempt to succeed *or* fail in the world of business.

With this constant atmosphere in new small business starts and the existing small business population, it behooves the business community to support feasible, small business management development proposals.

Historically, the majority of available small business assistance and development resources have been those of the Federal Government. Specifically, the Small Business Administration, some Department of Commerce programs and various short-term grants to government bureaus for demonstration projects.

It is imperative that the leaders of the Free Enterprise System demonstrate their willingness to provide the resources necessary to continue and supplement current governmental programs of assistance.

Especially so in the case of the "culturally new" entrepreneurs, that is the minority and disadvantaged individuals of our nation who are making the effort to *participate in* and *contribute to* our free enterprise society.

It should be noted that Santa Clara County, California has the following economic characteristics:

1. Economic deprivation of the Negro and Mexican-American population.
2. Rapid transformation from rural to urban economic problems.
3. Persistent and severe unemployment.
4. The plight of the disadvantaged small businessman and the minority underemployed is equally severe.
5. Social programs are producing minority and disadvantaged individuals who have had the process of social assimilation only initiated by motivation and on-the-job training programs.

The growing economy and population of Santa Clara County promises a healthy climate for expansion of existing business firms and the establishment of new ones. However, this area is undergoing a major socio-economic transformation, from a rural, agriculturaly oriented economy to an urban, highly industrialized complex. Since 1940, the population has increased from 175,000 to about 1,000,000 in 1966. This represents an average growth rate of 6.8% compared to 4.1% for California and 1.5% for the nation as a whole. Seventy-five percent of this unprecedented expansion is attributable to in-migration and only twenty-four percent is accounted for by native increase. Understandably, this population growth coincided with an equal change in the size in the labor force; in 1940 this was 60,000 and by 1966 it has become 350,000 strong. All segments of the population have been affected by these changes, though none more adversely than one of the first to populate this area—the Mexican-American.

Attention which has been focused *nationally* on the severe socio-economic plight of the Negro is heightened by the problems of a *forgotten minority in California* and the *Southwest*—the Mexican-American or Spanish surname persons, as they are euphemistically referred to. The plight of this ethnic minority is more serious in this region of the nation than elsewhere. In Santa Clara County, as of 1963, the Spanish surname population (well over 90% being Mexican-American) was 120,000 or roughly 12% of the total population. In addition, the Negro population for the area was 10,000 in 1963 or 1% of the total population.

It is not the size alone of the Spanish minority group which is of significance, but, as it has been stated so aptly in *Californians of Spanish Surname*, published in May 1964 by the *California Fair-Employment Practices Commission:*

"Mexican-Americans and others of Spanish-speaking origin lag seriously behind the majority of Americans in schooling, jobs and income. Displaced more and more from the farming and laboring occupations that were their mainstay in the past, *they are among the hard-core unemployed* in some areas. Their young people are often *discouraged or alienated from preparation for skills*—thus the circle of poverty is closed."

It is apparent that this component of the work force is currently relegated to those industries and occupations which provide the lowest incomes and the highest unemployment potential.

BENEFICIARIES AND OBJECTIVES

The immediate beneficiaries of this project are the owners, managers and employees of the small business firms operating within the area and the underemployed and unemployed population. Data compiled by the California Department of Employment reveals that as of September 1963, there were approximately 12,000 business firms in the Santa Clara County area employing less than fifty employees each. Collectively, these firms represented over *97% of all the business firms* in the area, and they *employ nearly 75,000 persons or 35% of the total labor force.* About 10,000 of these firms employ less than ten persons each, yet they comprise 78% of all business firms in the area and employ 29,000 persons

or roughly 14% of the total labor force. These small business firms, particularly those employing less than ten persons, constitute the bulk of the disadvantaged segment of the business community for they are the ones most frequently confronted with the following problems:

1. Short, medium and long-term credit is too often not available from commercial banks. When it is, the collateral, interest charges and other terms are excessively high, if not prohibitive.
2. Credit from trade or supplier sources is usually limited to short term periods at relatively high interest and repayment rates, if available at all.
3. Managerial and technical advisory and/or consultant services are extremely expensive or unavailable; hence, it is these firms that have the highest "business drop-out" rates (business failures and unsuccessful discontinuances).
4. Mexican-American, Negro and other ethnic minority members operating business firms and seeking Management/Development assistance, Financial assistance and other assistance tend to experience greater difficulty than do Anglo-American businessmen, which represents an added and very real disadvantage.

The number of bankruptcy filings in the U.S. District Court in San Jose has increased steadily over the years; the number of new cases jumped from 825 in 1959 to 2351 in 1965. Business bankruptcy filings still comprise about 15% of all cases filed, which means that approximately 352 business firms were adjudicated in 1965. Even this does not represent the full magnitude of the "business-drop-out" problem because only a portion of the business failures declare themselves bankrupt. Timely managerial or technical assistance could have prevented many of these drop-outs from occurring and have alleviated in resultant unemployment and welfare costs.

As Senator William Proxmire (Wis.) points out in his recent book, "*Can Small Business Survive*", there is a tremendous need for management counsel and assistance to the small business of today; in fact, the consensus of experts is that *the need for counsel is the most urgent of the small business needs—not the need for financing.*

METHOD

With these facts in mind, in 1965 the Small Business Developing Center of Santa Clara County, California, proceeded to develop all available counsel resources as a service to the small businesses of the area.

These services were separated into three (3) components:

1. *Active Volunteer Counselors:* Active businessmen and specialists currently employed in their own successful business or in management capacities.
2. *Senior Citizen Business Assistance Program:* Retired and senior citizens with successful, small business experience or middle management experience as specialists.
3. *Business Education Assistance Service:* The Graduate Buiness Schools of Stanford University, Santa Clara University and San Jose State University have made available their students to perform small business operations counseling and research. (See Appendix "A")

The Senior Citizens and Graduate Student Programs have been a *tremendous success.*

Numerous small businesses owe their continued success to the meaningful efforts of these two resources.

The Business Education Assistance Service accelerates the small business management development process by offering the following services:

1. Counseling on the site to improve management skills. Rendering management counsel to the small businessman who through the SBDC relationship is fully aware and receptive to the meaning of opportunity, both that given him and that he can offer to others.
2. The BEAS program, with almost ridiculous ease, integrates the minority individual into the actual market and business world, since its normal day-to-day activities through the SBDC keep it in constant contact with the business and industrial community.
3. The normal management counseling program of the BEAS offers the depth exposure and sophistication required by minority employers and employees to recognize, understand and be even slightly mobile in our active, commercial society.
4. BEAS counselors serve as instructors in Adult Education Small Business programs offered in nine (9) school districts and junior colleges.

Actually, this is only a small segment of the potential assistance. At the present rate of activity, the program is expanding rapidly.

In addition to the help which the Business Education Assistance Service can render to existing small business firms to strengthen and/or expand their operations, the BEAS will also aid new business in getting established on a sound and profitable basis, reducing the "business-drop-out" probability of these new business ventures and thus *promoting employment opportunities for the unemployed and underemployed.* The current rate of business failures and discontinuances results in a *tremendous waste of manpower opportunities* and material resources, neither of which we can afford to squander.

Besides the obvious benefit to the small business, the *Graduate Student and his school have also benefited* in the following manner.

BEAS has enabled the students of our universities to show the *Positive Student* who has an alternative to aimless demonstration—that is, community service.

BEAS has enabled the graduate student to obtain "real" experience in the decision making process, thereby increasing his future economic understanding and capability.

BEAS has illustrated the willingness of the Business "establishment" to reach out and assist the minority and disadvantaged population in their efforts to participate in our society.

BEAS is a meaningful service to the community.

Each of these Management Counsel groups has its own advisory council. The *BEAS* has a Graduate Business School full professor from each of the participating Universities.

PROCEDURE AND METHODOLOGY

1. Applicant is interviewed. Following the completion of an interview form and preliminary financial statement, the SBDC counselor conducts an analysis, and, if possible, closes the case with recommendations. This is true in both new formations and existing businesses. If the need is obviously financial and the applicant is eligible, a loan application and instructions are given.

2. If case appears to require a concentrated period of specialized consultation, the case may be assigned to *AVA* (Active Volunteer Assistance). *AVA* will seek a solution, make a recommendation and close the case.

3. If applicant need is for general guidance such as in new business formations, he may be assigned to *SCBAP* (Senior Citizens Business Assistance Program) for continuous counseling on the proper planning and preparation; if an existing business, he will receive the benefit of "in-the-line" experience from *SCBAP.*

4. If the need is for higher level technical or sophisticated management assistance, applicant may be assigned to *BEAS* (Business Educational Assistance Service) or *SCORE* (Service Corps of Retired Executives) where resources of a highly educated or executive level, experienced counselor will be made available.

5. All levels of counseling evaluate the need, contribute to a solution and make specific recommendations for future planning by the small businessman.

6. The SBDC counseling co-ordinator assumes responsibility for assignments and evaluation of applicant assistance.

PROPOSAL

However, the continuance of the program and its further development as a model for the nation is in jeopardy. The present BEAS and SCBAP programs have been offered as services of the Small Business Development Center of the Economic Opportunity Commission. Additionally, *needy* couselors (Graduate students with families) have been paid $3.00 an hour on a selected basis from SBDC budget funds with a maximum of forty (40) hours monthly compensable time. These individuals comprise approximately 33% of the total BEAS resources. The balance are volunteers.

But with recent cut backs in the total government financing of Economic Opportunity programs, SBDC support and co-ordination of BEAS/SCBAP will probably be discontinued and a successful demonstration aborted.

Funds to *continue the on-going program* Business Education Assistance Service of the SBDC of Santa Clara County are hereby requested for 16 months. In addition to program implementation, *an active effort to secure permanent sources of financing from the private business community will be aggressively pursued.*

BUDGET

Budget for this proposal is for a period of 16 months and is for $83,000.

Program Director (16 months at $1,000)	$16,000
Business Counselors (3) (16 months at $600)	28,800
BEAS Counselors (100) (at $3.00 per hr. (4000 hrs.))	12,000
Fiscal Control & Administration	1,000
Clerical (3) (16 months)	19,200
Office Furniture & Equipt	1,000
Travel at .10/mile (BEAS mileage)	2,000
Misc. Benefits	3,000
Total	83,000

SPONSORSHIP

This proposal has the support of those to be served, governmental and private agencies, all business organizations, minority organizations and educational institutions.

APPLICANT

The Small Business Development Center of the Economic Opportunity Commission of Santa Clara County, Inc., 40 North Fourth Street, San Jose, California.

DuBois Chemicals,
Division of W. R. Grace & Co.,
Cincinnati, Ohio., May 10, 1967.

Senator Wayne L. Morse,
United States Senate,
Washington, D.C.

Dear Senator Morse: Your May 6 address at the Cleveland State University conference on Cooperative Education was decidedly stimulating. I am glad to have had this opportunity of hearing your comment and recommendations. Education is of course a major determinant of the future; and your committee carries great responsibility accordingly.

As I listened to you Saturday evening, two things came to mind which I thought might be of interest so I should like to relay them to you in this letter.

One . . . relatively minor . . . is the historical background of Cooperative Education. The enclosed University of Cincinnati College of Engineering bulletin for 1967/8 states on page 8: "This unique college program was originated at the University of Cincinnati in 1906." An excellent reference on this is "*Ambassador to Industry—The Idea and Life of Herman Schneider*" by Clyde W. Park, 1948 (Bobbs Merrill & Co.). In other words, Dean Schneider's innovation of 1906 has now been matured by more than half a century of experience. You mentioned Antioch College and Northeastern University. Both have done much in cooperative education, but the principal factor both in time and in scope has been, I believe, the University of Cincinnati . . . and still is.

Much more important, however, is the need to keep a clear distinction between the broad term "work/study" and the specific "professional practice program" used in teaching, for example, engineering. In "work/study," major emphasis rests on th earning of income to help keep the student in school. In the basic "co-op plan," as operated at Cincinnati and at some other schools, major emphasis rests on the instructional value of the work assignments. Thus, a student of chemical engineering might find himself successively in a food processing works, a water treatment system, a pharmaceutical laboratory, a detergent plant, a paper mill and so forth.

Certainly the income is not *un*important, but certainly too its importance is secondary to the primary teaching function of the work experience. (Work/study for economic support alone is quite a different matter.)

Cooperative education has been very important for a good many years now. With the support of your Committee it can be even more so in the years ahead.

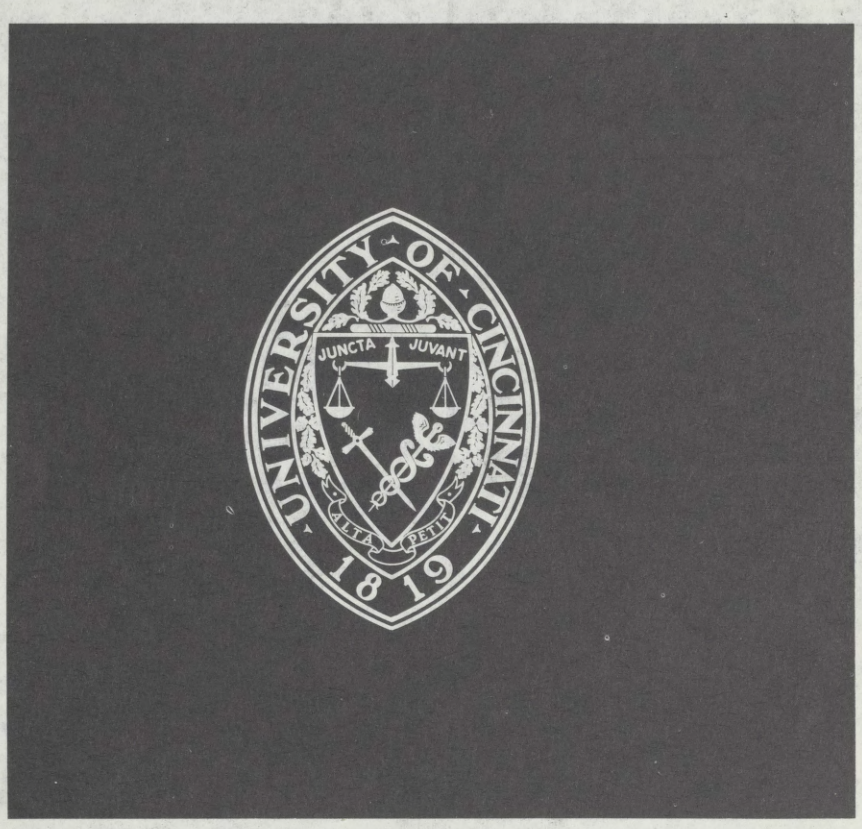
Very truly yours,

Samuel J. Miller, Ch.E.,
Senior Vice President.

UNIVERSITY OF CINCINNATI BULLETIN

College of Engineering

1967-1968



1967-1968 CALENDAR of the UNDERGRADUATE COLLEGES*

AUTUMN (Quarter) 1967

Orientation	Wed., Sept. 20-Tues., Sept. 26
Registration (for all undergraduate students)	Mon.-Tues., Sept. 25-26
Classes begin	Wed., Sept. 27
Holiday, Thanksgiving	Thurs.-Sat., Nov. 23-25
Classes end	Noon, Sat., Dec. 2
Examinations	Mon.-Fri., Dec. 4-8
Autumn Quarter ends	Noon, Sat., Dec. 9

WINTER (Quarter) 1968

Registration	Wed., Jan. 3
Classes begin	Thurs., Jan. 4
Holiday, Washington's Birthday	Thurs., Feb. 22
Classes end	Noon, Sat., Mar. 9
Examinations	Mon.-Fri., Mar. 11-15
Winter Quarter ends	Noon, Sat., Mar. 16

*Additional calendar items relating to a specific college schedule will be found in Part 2 of the *Bulletin* of that college.
Calendars of the Evening College and the Summer School will be found in those *Bulletins*.

SPRING (Quarter) 1968

Registration	Mon., Mar. 25
Classes begin	Tues., Mar. 26
Classes end	Tues., May 28
Holiday, Memorial Day	Thurs., May 30
Examinations	Fri., May 31-Wed., June 5
June Commencement	Thurs., June 13

SUMMER (Quarter) 1968

Registration	Fri.-Sat., June 14-15
Classes begin	Mon., June 17
Holiday, Independence Day	Thurs., July 4
Classes end	Noon, Sat., Aug. 17
Examinations	Mon.-Fri., Aug. 19-23
Summer Quarter ends	Sat., Aug. 24
Summer Commencement	Sat., Aug. 24

Summer School Terms (3⅓ weeks each)
First . . . . . Mon., June 17-Tues., July 9
Second . . . . . Wed., July 10-Thurs., Aug. 1
Third . . . . . Fri., Aug. 2-Sat., Aug. 24
Summer Quarter-Term (dates same as Summer Quarter)

UNIVERSITY OF CINCINNATI BULLETIN

Announcement

of

College of Engineering

1966-1967

Published by the University of Cincinnati
Van Wormer Administration Building
Cincinnati, Ohio 45221
Telephone: 475-8000

831

COLLEGES OF THE UNIVERSITY

The Graduate School
McMicken College of Arts and Sciences
College of Engineering
College of Education and Home Economics
    School of Education
    School of Home Economics
College of Business Administration
College of Medicine
College of Law (Cincinnati Law School)
College of Nursing and Health
College of Design, Architecture, and Art
College of Pharmacy
College-Conservatory of Music
University College (Two Years)
Evening College
Summer School
Raymond Walters Branch (Two Years)

Affiliated with the University:

Art Academy of Cincinnati
Cincinnati Speech and Hearing Center
Hebrew Union College—Jewish Institute of Religion

This *Bulletin* is up-to-date as of the time of printing. The University reserves the right to make changes in policy, regulations, and fees, as circumstances dictate, subsequent to publication. Each College expects its students to have knowledge of the information presented in this *Bulletin* and in other University publications.

Requests for catalog and information should be addressed to the Dean of the college.

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BOARD OF DIRECTORS

Appointed by the Mayor of Cincinnati

	Term Expires December 31
James P. Walsh	1967
Frank H. Mayfield, M.D.	1968
Philip M. Meyers	1969
Arthur W. Schubert	1970
Jane DeSerisy Earley	1971
Earl T. Barnes	1972
M. R. Dodson	1973
George C. Eyrich	1974
Edwin A. Snow	1975

Officer, 1967

Arthur W. Schubert, *Chairman*

Clerks

Ralph C. Bursiek, *Clerk*

Frank T. Purdy, *Assistant Clerk*

The Great Seal of the University



QUARTER CALENDAR

The University of Cincinnati operates on the Quarter Calendar. For the year 1967-1968 all undergraduate schools and colleges will follow the Quarter Schedule shown on the inside front cover of this *Bulletin.*

Academic Credits. All academic credits are expressed in terms of Quarter Credits. This plan replaces the two former schemes of semester and term credits. Equivalents are: (1) 1 Semester Credit = 3/2 Quarter Credits; (2) 1 Term Credit = 2/3 Quarter Credit.

Instructional Periods and Final Examinations. Each Quarter is approximately equal in length, having 45-47 instructional days. The last week of each of the four Quarters will be devoted to scheduled, final examinations. Academic marks and credits will be reported promptly following the close of each Quarter. In the undergraduate colleges, the work of each Quarter will be a completed unit of instruction. However, this provision will not affect the sequence of Quarters in a course that may be required by the faculty of a college.

Holidays. Recognized holidays falling within the four instructional periods are: Thanksgiving Weekend, Washington's Birthday, Memorial Day, and Independence Day.

Special arrangements will be made for those students whose religious holidays fall within an orientation, registration, or instructional period. However, it will be the individual student's responsibility to inform his college office of the circumstances and to comply with the special arrangements that are made.

Orientation. All new students, freshman and transfer, are required to report for orientation prior to the beginning of classes in the Autumn Quarter. See page xvii of this *Bulletin* for further information.

Registration. Registration by mail is required whenever an academic program can be determined in advance. Instructions will be provided to all students eligible for mail registration. Priority in class sections will go to those who enroll by mail. For those unable to follow the mail procedure, two registration days are scheduled in the Autumn Quarter—Monday and Tuesday prior to the beginning of classes the following Wednesday. In each remaining Quarter only one registration day is reserved for those who are unable to enroll by mail.

PART 1

ADMINISTRATIVE OFFICERS

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Walter Consuelo Langsam, Ph.D., Litt.D., L.H.D., Sc.D., D.C.L., LL.D. . . . . President
204 Van Wormer Administration Building

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304 Van Wormer Administration Building

Peter R. Thoms, B.S., LL.B. . . . . University Legal Officer
305 Van Wormer Administration Building

Eva H. Ruppert (Mrs.) . . . . . Administrative Assistant
204 Van Wormer Administration Building

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205 Van Wormer Administration Building

Jeanne V. Anderson (Mrs.) . . . . . Assistant Secretary to the President
206 Van Wormer Administration Building

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202 Van Wormer Administration Building

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108 Van Wormer Administration Building Director of Finance

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114 College of Medicine Building

Illeen Tedtmann (Mrs.) ..... Administrative Assistant
114 College of Medicine Building

Eileen Routh (Miss) ..... Secretary
114 College of Medicine Building

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William G. Baetz, LL.B. ..... Director of Development
300 Van Wormer Administration Building

John E. Small, B.B.A. ..... Executive Secretary, Alumni Association
Simrall Hall

Joseph W. Sagmaster, B.A., B.Litt. (Oxon.) ..... Director of Broadcasting
Health Service Building

Richard B. Baker, B.A., LL.B. ..... Director of Community Relations
101 Van Wormer Administration Building

Bonnie Braun (Mrs.) ..... Secretary
207 Van Wormer Administration Building

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201 Hanna Hall

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201 Hanna Hall

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201 Hanna Hall

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119 McMicken Hall

Lois Whitenack (Mrs.) ..... Secretary
103 Beecher Hall

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118 Baldwin Hall

Martha R. Weichold (Miss) ..... Secretary to the Dean
118 Baldwin Hall

Betty Stilgenbauer (Mrs.) ..... Secretary to the Division
118 Baldwin Hall

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100 Beecher Hall

Babette D. Marshall (Mrs.), B.S. ..... Assistant to the Dean and
202 Beecher Hall Student Financial Aid Officer

Jean E. Tuerck (Miss), B.A., M.S. ..... Assistant to the Dean
322 Union Building

Helen M. Rose (Mrs.) ..... Administrative Assistant
100 Beecher Hall

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105 Beecher Hall

James A. Scully, M.A. ..... Assistant Dean
105 Beecher Hall and Foreign Student Adviser

Edward C. Keiser, M.S. ..... Assistant Dean
105 Beecher Hall

Richard J. Towner, M.A. ..... Assistant Dean
105 Beecher Hall

Barry K. Hess, Ed.M. ..... Assistant to the Dean
105 Beecher Hall and Resident Counselor

Harry F. McCann, B.S. ..... Assistant to the Dean
105 Beecher Hall and Resident Counselor

Gary M. Penfield, M.S. ..... Assistant to the Dean
105 Beecher Hall and Resident Counselor

Virginia Ann Coate (Mrs.), B.S. in Com. ..... Secretary
105 Beecher Hall

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101 Beecher Hall

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101 Beecher Hall

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101 Beecher Hall

Mary S. Campbell (Mrs.), B.S., M.A. ..... Assistant Dean
101 Beecher Hall

Eva C. Horwitz (Mrs.), B.A. in Ed. ..... Secretary
101 Beecher Hall

GENERAL INFORMATION

History of the University

The University of Cincinnati is the oldest municipal university in the United States. Its founding date, 1819, represents the establishment of the Cincinnati College and the Medical College of Ohio. The President of the University is concurrently President of Cincinnati College. In 1870 the City of Cincinnati, under a state act "to enable cities of the first class to aid and promote education," established the University of Cincinnati which later absorbed these colleges. Today, the component colleges and schools with the dates of their establishment, founding, or merger with the University are:

The Graduate School, established as a separate college in 1906.

The McMicken College of Arts and Sciences, founded in 1870; successor to Cincinnati College, founded in 1819.

**The College of Engineering,* first organized in 1874 as a Chair in Civil Engineering; established as the College of Engineering in 1900.

The College of Education and Home Economics: The School of Education, established in 1905 as the College for Teachers; *The School of Home Economics,* established in 1924 as the School of Household Administration; the two schools were placed under a single administration in 1959.

**The College of Business Administration,* founded in 1906 as the College of Finance, Commerce, and Accounts (Cincinnati); merged with the University in 1912.

The College of Medicine, founded in 1819 as the Medical College of Ohio; initially affiliated with the University in 1896. The Miami Medical College (founded in 1852) was merged with it in 1909. Formally established as the College of Medicine of the University in 1917.

The College of Law, founded in 1819 as part of Cincinnati College. In 1835 the Cincinnati Law School (founded in 1833) was merged with it, under name of Law School of Cincinnati College; merged with the University in 1918.

The College of Nursing and Health, founded in 1889 as the Cincinnati Training School for Nurses; initially merged with the University in 1916; established as a separate college in 1938.

**The College of Design, Architecture, and Art,* first organized in 1922 as a Department of Architecture; established as the School of Applied Arts in 1925, then as the College of Applied Arts in 1946; renamed in 1961.

*These colleges offer the cooperative type of study-experience programs, originated at the University in 1906.

The College of Pharmacy, founded in 1850 as the Cincinnati College of Pharmacy; merged with University in 1954.

The College-Conservatory of Music, founded as two separate institutions: The Conservatory of Music, 1867, and The College of Music, 1878; merged as The College-Conservatory of Music in 1955; merged with the University in 1962.

The University College, established in 1960.

The Evening College, first organized in 1906, established as a separate college in 1938.

The Summer School, first organized in 1900, established as a separate school in 1948.

The Raymond Walters Branch in Blue Ash, established in September, 1967.

Objectives of the University

As a complex institution of higher learning, the University has manifold objectives. Our primary objectives, however, are (1) to preserve and disseminate knowledge now available in the arts, in the sciences, and in the various professional areas important in modern life; (2) to extend through basic research and investigation the boundaries of knowledge; and (3) to educate men and women, by example and teaching, for a fuller and richer life as responsible citizens in modern society.

General Requirements for Admission to the Undergraduate Colleges

Admission to the baccalaureate colleges and assignment to residence halls normally will be based upon the chronological order of receipt of the completed application modified by predicted grade-point average and by evidence of particular preliminary training or talent. The predicted grade-point average of an applicant will be computed on the basis of such factors as high school rank and program, SAT or ACT scores, achievement tests, special talent or ability, and the high school counselor's recommendation. Predicted grade-point averages for programs in all colleges are now being developed. Meanwhile. a student who meets the specific qualifications listed in Part 2 of this *Bulletin* may be assumed to have the equivalent of the required predicted grade-point average.

Admission to an appropriate undergraduate program is open to any high school graduate who is a legal resident of Ohio, can commute from the home of his parents, and completes his application before the closing date of the program. An entering student may be assigned to a general education program as a prerequisite for possible transfer to a specialized curriculum.

Nonresidents of Ohio who possess the qualifications set forth in Part 2 of this *Bulletin* and complete their applications before the closing date of the desired programs will be eligible for admission as long as space permits. They normally will be assigned to residence halls on the basis of chronological order of receipt of completed application and predicted grade-point average.

There are certain units or courses required for admission to each college program. A detailed statement of admission requirements of this College will be found in Part 2 of this *Bulletin.*

Admission Materials. Application for admission blanks and high school transcript forms may be secured from the Central Admissions Office, University of Cincinnati, Cincinnati, Ohio 45221.

Application Fee. A fee of $15 will be charged for the processing of each application for admission to the University. This fee is not refunded. Checks or money orders, payable to the University of Cincinnati, should accompany the formal application.

Physical Examination. A physical examination is required of each applicant. Admission may be denied for failure to meet the physical and health requirements. A tuberculin chest X ray or a skin test, such as the *Mantoux* or the *Tine,* is required. A certificate of smallpox vaccination dated within the five-year period prior to the student's first official registration is also required for admission.

Student Fee Deposit. A deposit of $60 on student fees, payable when an applicant receives notice of tentative acceptance, will apply toward fees later charged to the full-time day student when he enrolls. Payment of the deposit when due assures the applicant of a place in class and is considered as evidence of good faith that he will register.

The student fee deposit will be refunded if the applicant is later denied admission through failure (1) to acquire the necessary credits, (2) to be graduated from high school, or (3) to meet the physical and health requirements. It may be refunded also if the applicant is called to active military duty.

Credit for the fee deposit may be extended for (1) twelve months when an applicant fails to register due to *illness or other causes entirely beyond his control,* or (2) the period of active duty when an applicant enlists in military service. Upon registration within the specified time limits, the credit will apply toward fees charged to the same person only when he enrolls as a full-time student in any day college except Summer School.

Application for either refund or credit must be made in writing at the time of the admission cancellation. Proof of any extenuating circumstances may be required. The Registrar is authorized to make decisions on these matters in accordance with University regulations.

Advanced Placement Program. In its admissions procedure, the University of Cincinnati gives consideration to students who have taken college-level courses in high school under the Advanced Placement Program of the College Entrance Examination Board. Advanced placement or credit, or both, may be granted in appropriate college courses to students who have distinguished themselves on the national Advanced Placement Examinations. High school students who have taken such examinations and desire to attend this institution should request that their papers be referred to the Registrar, University of Cincinnati.

Reserve Officers Training Corps

The University maintains two volunteer Reserve Officers Training Corps in cooperation with the United States Government. Running concurrently with college degree programs, instruction is provided by officers of the Army and the Air Force. Students who successfully complete either program may be commissioned as Second Lieutenants in the respective service.

Both Army and Air Force ROTC offer a voluntary four-year program with a two-year course available as an option. Students are furnished uniforms and all required textbooks. Students receive a monetary retainer allowance of not less than $40 nor more than $50 per month for a maximum of 20 months during the advanced part of the program. In addition, advanced students upon graduation and commissioning receive a $300 uniform allowance.

Cadets of both programs are eligible to receive pilot training free of charge if qualified. Successful completion leads to the award of a civilian pilot license by the Federal Aviation Agency. In addition, the Air Force trains in such specialty fields as Navigator, Scientific/Technical and Administrative.

The passage of the ROTC Vitalization Act also offers a financial assistance program which provides full student fees and books, plus $50 per month retainer pay. Students compete for this program. Full details on applying for this course are available on request to either the Army or Air Force ROTC.

Cadets in the Army ROTC Advanced Program may apply for loans from *The Colonel Alfred G. Karger Army ROTC Loan Fund,* which is an interest-free revolving fund. Loans are awarded on the basis of the applicant's scholarship, need, leadership qualities, patriotism, and excellence in ROTC. Applications may be filed with the Army ROTC, Biology Building, University of Cincinnati, Cincinnati, Ohio 45221.

Of special interest to women students is *Guidon,* a women's recognition society which is an auxiliary to *Scabbard and Blade,* and *Angel Flight,* a women's auxiliary to the *Arnold Air Society.*

Grading System

At the end of each Quarter, the University Registrar sends out an official report on each student's academic achievement. Reports are given in terms of grades and quality points, as indicated:

Grading and Point System

Grade	*Description*	*Quality Points*	*Grade*	*Description*	*Quality Points*
A	Excellent	4	G	Withdrawal (Failing)	0
B	Good	3	Y	Withdrawal (Unofficial)	0
C	Fair	2	W	Withdrawal (Official)	None
D	Poor	1	S	Satisfactory, Passing	None
F	Failure	0	U	Unsatisfactory	None
E	Condition	0	T	Audit	None
I	Incomplete	0	N	No Grade Reported (See instructor)	None
R	Absence	0			

STUDENT FEES

Residence of Students

Fees are established separately for each school or college in the University. Specific charges are stated in Part 2 of this *Bulletin*. Fees are charged on the basis of (a) residence in the City of Cincinnati,* (b) residence in the State of Ohio outside of the City of Cincinnati, and (c) residence outside of the State of Ohio. Lower fees are charged to the residents of the City of Cincinnati and residents of the State of Ohio because the city and the state provide tax support to the University. It follows that no person who comes to the city or to the State of Ohio for the primary purpose of attending a college or university is entitled to the preferred fee rates.

The following rules of the Ohio Board of Regents and the Board of Directors of the University of Cincinnati shall govern the assessing of student fees:

Residents of the City of Cincinnati

(1) An adult student, twenty-one years of age or older, is considered to be a Cincinnati resident if he has resided in the city for a minimum of twelve consecutive months preceding the date of enrollment and if he has an evident present intent to remain in the city indefinitely, provided that his residence in Cincinnati has not been for the purpose of attending a college or university.

(2) A minor student is considered to be a Cincinnati resident if his parents or his legal guardian have resided in the city for a minimum of twelve consecutive months preceding the student's enrollment and if the parents' or guardian's residence during that year has been maintained with the evident present intent to remain in the city indefinitely, provided that such action has not been taken for the purpose of gaining residence status for the minor student.

(3) For the purpose of determining residence requirements under these rules, a person will be considered a minor until he has reached his twenty-first birthday even though such person may have been emancipated. Married minors, however, are entitled to establish and to maintain their own residence pursuant to section (1).

(4) The residence of a married woman is determined by the rules which would apply to her husband if he would seek enrollment; except that a woman who has enrolled as a Cincinnati resident may continue to be considered a Cincinnati resident upon marrying a nonresident, provided her enrollment is continuous and she continues to live in Cincinnati.

(5) A woman who is legally separated from her husband may establish her own residence pursuant to section (1).

*In view of the favorable vote for financial support of the University through taxation, residents of the Village of Golf Manor are also entitled to this preferred treatment.

(6) The residence of any student may be re-evaluated for each term of re-enrollment. At such time, any student who has not been classified as a Cincinnati resident, and requests to be so classified, must prove that he has met all requirements for Cincinnati residence as stated in these rules.

(7) A student who has been classified as a Cincinnati resident shall be considered to have lost his residence in this city twelve consecutive months after he or, in the case of a minor, his parents or legal guardian moves beyond the city limits with the intention of remaining there and making such location their place of residence, notwithstanding the fact that he or they may entertain an intention to return at some future period.

(8) Aliens admitted to this country on immigrant visas may establish Cincinnati residence in the same manner as any other nonresident.

(9) Service men and women who enter the service from another city or state and their dependent children shall be classified as Cincinnati residents during the period of their active duty assignment in Cincinnati.

Residents of the State of Ohio Outside of the City of Cincinnati

(1) An adult student, twenty-one years of age or older, is considered to be an Ohio resident if he has resided in the state for a minimum of twelve consecutive months preceding the date of enrollment and if he has an evident present intent to remain in the state indefinitely, provided that his residence in Ohio has not been for the purpose of attending a college or university.

(2) A minor student is considered to be an Ohio resident if his parents or his legal guardian have resided in the state for a minimum of twelve consecutive months preceding the student's enrollment and if the parents' or guardian's residence during that year has been maintained with the evident present intent to remain in the state indefinitely, provided that such action has not been taken for the purpose of gaining residence status for the minor student.

(3) For the purpose of determining residence requirements under these rules, a person will be considered a minor until he has reached his twenty-first birthday even though such person may have been emancipated. Married minors, however, are entitled to establish and to maintain their own residence pursuant to section (1).

(4) The residence of a married woman is determined by the rules which would apply to her husband if he would seek enrollment; except that a woman who has enrolled as an Ohio resident may continue to be considered an Ohio resident upon marrying a nonresident, provided her enrollment is continuous and she continues to live in the State of Ohio.

(5) A woman who is legally separated from her husband may establish her own residence pursuant to section (1).

(6) The residence of any student may be re-evaluated for each term of re-enrollment. At such time, any student who has not been classified as an Ohio resident, and requests to be so classified, must prove that he has met all requirements for Ohio residence as stated in these rules.

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(7) A student who has been classified as an Ohio resident shall be considered to have lost his residence in this state twelve consecutive months after he or, in the case of a minor, his parents or legal guardian moves to another state with the intention of remaining there and making such state their place of residence, notwithstanding the fact that he or they may entertain an intention to return at some future period.

(8) Aliens admitted to this country on immigrant visas may establish Ohio residence in the same manner as any other nonresident.

(9) Service men and women who enter the service from another state and their dependent children shall be classified as Ohio residents during the period of their active duty assignment in Ohio.

Responsibility of the Student

The burden of registering under proper residence is placed upon the student.

If there is any question of the student's right to legal residence in Cincinnati or Ohio, an application for resident status must be presented to the Registrar at least five days prior to the first day of registration for the college in which the student plans to register.

Student fee assessments are subject to audit at any time throughout an enrollment period or the academic career of the student. Students who do not pay the appropriate sum within thirty days after they have been notified that the fee for nonresidence or for residence in the State of Ohio outside Cincinnati has been assessed against them will have their registration in the University canceled.

Payment of Student Fees

Detailed information concerning student fees may be found in Part 2 of this *Bulletin*.

All fees required of students must be paid in advance and as a condition of registration. Registration shall not be considered as completed until all such payments have been made, and a late registration fee shall be added to fees not paid on or before the days set apart for registration. If they are not paid promptly, the Dean is authorized to exclude students from their classes.

The University will accept checks for the payment of fees, but only for the exact amounts required. Checks for sums in excess of these amounts will not be accepted. Fees paid by checks subsequently protested will be classified as late registrations and subject to the late registration fee.

For the convenience of parents who prefer to pay standard educational expenses in monthly installments, the University has made arrangements with The Tuition Plan, Inc., Educational Funds, Inc., and with the Central Trust Company of Cincinnati to handle such installment contracts. Parents wishing information concerning these plans should communicate with the Student Accounts Office of the University of Cincinnati before July 15.

Student fees are subject to change by action of the Board of Directors; such changes take effect at once and apply to students already enrolled unless otherwise specified.

Miscellaneous Fees

Locker Deposit. A deposit of $5.00 is required for the use of each convenience locker (hat and coat) in the University buildings. Of this amount $1.00 is retained for each year's use of the locker. A locker may not be transferred from one student to another.

Insurance for Foreign Students. All foreign students (graduate and undergraduate) are required to carry Health and Accident Insurance. A fee of $20 per Quarter will be assessed for three Quarters to meet the cost of this insurance which covers a twelve-month period.

Fee for Removal of Condition, Absence, or Incomplete Grade. A charge of $5.00 is made for the removal of a condition, absence, or incomplete grade by a supplemental examination or by meeting other requirements. Prior to the examination or other removal procedure, each student must present to the instructor a receipt showing that this fee has been paid.

Change of Course Fee. After a student has completed his registration, a fee of $2.00 is charged for each change in course or course section, when the change has been initiated by the student.

Late Registration Fee. Special fees are charged for late registrations made after registration dates designated in college bulletins: Full-time students, $5.00; Special students, $3.00.

Union Fee. A Union fee of $6.00 is charged each Quarter that a student is on campus, in full-time study.

Parking Fees. Fees for parking cars are as follows:

Lots:	*Commuting (6:00 a.m.-6:00 p.m.)*	*Campus Resident (24-Hour)*
Per Quarter	$ 9.00	$13.50
Per Year (3 Quarters)	27.00	40.50
Summer Parking:		
3-1/3-Week Term	3.00	4.50
Full Quarter-Term	9.00	13.50
Scioto Garage:		
Per Quarter	13.50	18.00
Per Year (3 Quarters)	40.50	54.00
Summer Parking:		
3-1/3-Week Term	4.50	6.00
Full Quarter-Term	13.50	18.00

(Two additional garages are under construction; upon completion the rates will be announced.)

Evening College Parking — 25 cents per night.

Graduation Fee. (Undergraduates only). The fee for an associate degree is $10 and for a baccalaureate degree is $15.

Cap and Gown Rental Fee. Amount is based on the charge made to the University by the renting agency.

Transcript Fee. On request, the University Registrar provides each student with one copy of his official transcript or academic record free of charge. Subsequent copies may be procured, for which a charge of $2.00 each is made.

Placement Credentials Fee. Each registered graduate is entitled to have three free copies of his placement credentials prepared and used in his behalf. A fee of $5.00 will be charged for each subsequent copy.

Refund of Student Fees

Student fees are not refunded except when withdrawal from the course or courses in which the student is registered is *due to illness or other causes entirely beyond his control.* Application for refund must be made by the student in writing on the prescribed form at the time of withdrawal; otherwise, no refund shall be made. All such applications will be referred for decision to the Registrar, the officer empowered to initiate refunds in accordance with University regulations. For regular Quarters, cash refunds, *when allowed,* shall be in the following proportions: after less than two weeks, 80%; after two but less than three weeks, 60%; after three but less than four weeks, 40%; after four but less than five weeks, 20%. After the fifth week, no cash refund shall be allowed. In the case of three-and-one-third-week term courses or other short-term courses *when cash refunds are allowed,* the University retains a percentage of the fees as follows: one-week courses, 25% per day; two-week courses, 20% per day; three-and-one-third-week courses, 15% per day; four-, and five-, and six-week courses, 10% per day.

A credit memorandum may be issued to the student, upon his request, for the total amount of his cash fee payments, provided that such payments in the aggregate are equal to, or exceed, the amount which the University would retain in the event of a cash refund. *No cash refund or credit memorandum will be initiated on fees paid with a credit memorandum.*

A student must be in good standing in his classes at the time of withdrawal, and must not have received scholastic credit, to be eligible for a refund or credit memorandum. In the event of dishonorable dismissal, fees will not be refunded in whole or in part.

A student called to military service without receiving scholastic credit for work done in the academic term in which he is enrolled will, upon furnishing proof that he is on active military duty, receive full refund of the fee payment. This will not apply to a student who enlists in the military service and withdraws from the University of his own free will. Such student will be entitled to a credit memorandum which will permit him to repeat either the part or the whole of the academic Quarter or term in which he was enrolled at the time of his withdrawal.

A student "in good standing" and recommended by his major department, if he is drafted or if he enlists, shall obtain full credit for the Quarter provided he has completed eight weeks of acceptable work and remains in school until at least ten days prior to reporting for military duty. A senior so qualifying in his last Quarter will be graduated with his class provided the credits for courses taken in that Quarter complete the regular requirements for the degree for which he is a candidate.

STUDENT PERSONNEL PROGRAM

The University provides a student personnel program designed to promote the educational, emotional, moral, and social development of each individual student. The Office of the Dean of Students is responsible for the coordination of the total program and for the general supervision of the student personnel offices that implement the program, including the Offices of the Dean of Men and Dean of Women and other offices responsible for student services.

Freshman Orientation. Each autumn, new students, freshman and transfer, are required to attend the events that are scheduled during Orientation preceding the beginning of classes in the Autumn Quarter. Information is provided concerning the history and traditions of the University, the educational and professional opportunities available, student personnel services, campus facilities, and University policies and procedures. Students who have not registered earlier by mail will register for their Autumn Quarter on the official registration days. For specific dates, see inside front cover.

Special arrangements will be made for those students whose religious holidays fall within Freshman Orientation. However, it will be the responsibility of each individual student so affected to inform his college office in advance and to comply with the special arrangements that are made.

Student Government. The assumption of responsibility for his own affairs is an important part of a student's training for future citizenship. Each student is not only responsible for his own conduct but, as a campus citizen, shares in the responsibility for student affairs. Through his vote in campus elections, he participates in determining the student leadership and policies in student government. Considerable responsibility has been delegated to various student government groups, i.e., to the University Student Council and its subsidiaries, to the Tribunal of each college, to the governing groups in the residence halls, and to the class officers.

Student Activities and Organizations. Various student activities and organizations contribute to the student's personal and social development. These include national fraternities and sororities and local social organizations; musical, dramatic, forensic, and journalistic activities; intramural sports; professional and departmental clubs; recognition and honor societies.

Student Eligibility. Only regular full-time students in good standing are eligible to participate in student organizations and activities. Recognition and honor societies set additional requirements and standards in determining eligibility for membership.

Honor Societies. Students enrolled in baccalaureate programs in any of the undergraduate colleges are eligible for election to the following national honor societies in recognition of high scholastic attainment, leadership, and other outstanding achievements.

Alpha Lambda Delta (Scholarship—Freshman Women)
Mortar Board (Leadership—Women)
Omicron Delta Kappa (Leadership—Men)
Phi Eta Sigma (Scholarship—Freshman Men)
Tau Kappa Alpha (Forensics)

There are other honor societies whose membership is restricted to specific colleges or academic departments listed in Part 2 of each *Bulletin*.

Recognition Societies. Students in all undergraduate colleges are eligible for election to the following societies in recognition of interest and participation in various areas of student life:

Angel Flight (Air Force—Women—National)
Arnold Air Society (Air Force—Men—National)
Guidon (Military—Women—Local)
Kappa Kappa Psi (Band—Men—National)
Pershing Rifles (Military—Men—National)
Pi Delta Epsilon (Journalism—National)
Scabbard and Blade (Military—Men—National)
Sigma Sigma (Junior and Senior Men—Local)
Sophos (Sophomore Men—Local)
Tau Beta Sigma (Band—Women—National)

Departmental Clubs, Professional Fraternities and Societies. The various undergraduate colleges have departmental clubs for students interested in a specific area of specialization, and the colleges offering professional degrees have chapters of national professional fraternities and societies. Students are elected to membership in these organizations in recognition of interest and achievement in a specific professional field.

Fraternities and Sororities. Twenty-two national fraternities and fifteen national sororities maintain chapters or colonies at the University of Cincinnati. Through the services of faculty, staff, and alumni advisers, the work and operation of fraternities and sororities are coordinated with and are maintained as an essential part of the University student personnel program. Members of the staffs of the Dean of Men and the Dean of Women work closely with the fraternities and sororities.

Religious Life. Although the University itself is, and always has been, nonsectarian, it encourages religious interests, education, and fellowship among its students, and fosters moral responsibility on the part of students in the campus community.

Protestant, Catholic, and Jewish groups maintain religious foundations with their own directors and advisors. Students are cordially welcomed by the various religious faiths, many of which have churches and parishes located near the University campus.

Cultural Opportunities. In addition to the numerous cultural opportunities available to students in the city, the University provides an annual series of all-University convocations, scheduled lectures and discussions, dramatic presentations and other special programs including concerts, recitals, reviews, and art exhibits.

Athletics and Sports

Intercollegiate athletics are a positive factor in the life of students at the University of Cincinnati. A complete program is offered in eleven sports—football, basketball, baseball, track, tennis, rifle, swimming, gymnastics, golf, wrestling and cross-country. The University is a member of the Missouri Valley Conference and the National Collegiate Athletic Association.

A comprehensive and active program in intramural sports is scheduled for both men and women students. The program extends throughout the year and

includes some 20 different activities. In support of the programs in intercollegiate athletics and intramural sports, the University maintains Nippert Stadium, the Armory-Fieldhouse, Laurence Hall, the physical education building for men with an Olympic-size swimming pool, Schmidlapp Hall, the women's physical education building and swimming pool; numerous courts for basketball, tennis, and handball; facilities for baseball, weight lifting, wrestling, corrective exercises; track and playfields for other outdoor sports. The Armory-Fieldhouse will accommodate over 8000 people at basketball games; Nippert Stadium will seat 30,000 and is equipped for night games.

Any student desiring to participate in organized sports or free play will find ample opportunity and encouragement to do so.

Student Responsibility and Conduct

The University expects each student to respect the rights and privileges of others and, as an adult, be responsible for his own conduct. All students and student organizations are expected to observe the policies of the University and the laws of the city, state, and national government. Failure to do so may result in having the privileges and opportunities extended to University students and student organizations either curtailed or withdrawn.

A student may be dismissed at any time for misconduct of such a nature as to be prejudicial to the University community. In the event of such dismissal, fees will not be refunded.

Student Services

Student Health Service. Emergency care and first-aid treatment on campus are provided by the Student Health Service for all students. Noncommuting students are given the medical care usually administered by the family physician.

Testing and Counseling Services. Various psychological services are available without cost to all full-time regularly enrolled students. These include individual consultation and psychological counseling and testing to assist the student in educational and vocational planning and to facilitate his personal development.

Foreign Student Services. The University maintains a Foreign Student Office which is responsible for all official services rendered for foreign students. These services meet the various requirements of the United States Government and the governments of the foreign countries whose students come to the University for study and training. Before final admission to the University is granted all foreign students *must* be processed through the Foreign Student Office.

University Placement. The Placement Office is responsible for the full-time and part-time placement of undergraduate students, graduate students, and alumni.

(1) *Student Placement:* Responsibility for students on part-time positions concurrent with their classroom curriculum and during vacation periods.

(2) *Senior and Graduate Placement:* Responsibility for the student's career posture at terminal points in his education.

(3) *Teacher Placement — Primary and Secondary Schools:* Responsibility for students entering teaching positions in primary and secondary schools.

(4) *Teacher Placement — College and University:* Responsibility for students entering teaching positions in colleges and universities.

(5) *Alumni Placement:* Responsibility for graduates from one of the University's colleges.

Students are given the opportunity to attend on-campus interviews conducted by representatives from industry, business, government agencies, and the professions. Current literature related to opportunities in over 3,000 organizations is maintained to assist students in career planning. Student résumés may be filed with the Department of Placement. Students are invited to arrange personal interviews with members of the professional staff.

Student Financial Aid

Various forms of financial aid are available to worthy, qualified, students who demonstrate financial need. Evaluation of need is based on a Parents' Confidential Statement, which must be filed with the College Scholarship Service, Evanston, Illinois or Princeton, New Jersey. To be considered for any form of financial aid, a student must be accepted for admission or be enrolled in one of the colleges of the University.

Freshman applications for financial aid may be obtained from the Central Admissions Office, University of Cincinnati, Cincinnati, Ohio 45221. Students currently enrolled at the University apply for financial aid through the Student Financial Aid Office. Applications from both freshmen and upperclassmen must be filed prior to March 1, and Parents' Confidential Statement filed by February 1, in order to assure consideration for the following academic year. Information concerning financial aid may be obtained from the Student Financial Aid Office.

Scholarships. A limited number of University Honor Scholarships, applicable to fees, are awarded to deserving students in all of the undergraduate colleges on the basis of superior academic achievement. The amount of the award varies according to financial need. In addition to the University scholarships, each college and some departments award scholarships from restricted funds to those who qualify. Information concerning these scholarships will be found in Part 2 of this *Bulletin.* High school seniors applying for freshman scholarships must be recommended by their principals or counselors.

Loans. By providing the necessary matching funds, the University makes available loans for students who qualify under the conditions of the National Defense Education Act. Loans are made up to the limit of available funds on the basis of each student's academic achievement and financial need. Funds from endowments and gifts are also available for short-term loans to upperclass students who qualify. Students under twenty-one years of age must have their parents or guardians act as co-signers of all notes.

Under the Government Guaranteed Loan Program, the Federal Government guarantees 6% interest to the lender while the student is in school, and 3% during the repayment period. When the student ceases full-time study, he assumes the responsibility of repaying the principal and interest at 3%. Many states now have a state agency which administers this loan program. Additional information may be obtained from the Office of Higher Education in each state, or from banks participating in the program.

Federal College Work-Study. The Work-Study Program which was authorized under the Economic Act of 1964 is designed to provide needy full-time students with part-time employment. Students may work a maximum of fifteen hours a week while school is in session and forty hours a week during vacation periods.

Federal Educational Opportunity Grants. Students with exceptional financial need and with academic promise who could not otherwise finance their educa-

tional expenses may be considered for an Educational Opportunity Grant. This gift aid may be awarded only if an equal amount of assistance is provided through other forms of financial aid such as scholarships, loans, and employment.

Monthly Payment Plans. The University has made arrangements whereby parents may make contracts with private financial organizations for payment of educational expenses by monthly installments. Detailed information may be obtained from the Student Accounts Office concerning The Tuition Plan, Inc., Educational Funds, Inc., and the plan offered by the Central Trust Company, for students in the Greater Cincinnati area.

Veterans and War Orphans

The University of Cincinnati is approved for the education and training of veterans under the Veterans Readjustment Assistance Act and for the education of children of deceased or disabled veterans under the War Orphans Educational Assistance Act.

Veterans planning to train under the Readjustment Assistance Act are required to pay cash for fees, books, and supplies. The veterans, in turn, receive an allowance each month of schooling, based upon credit hours and the number of dependents.

The War Orphans Educational Assistance Act provides similar educational benefits to the children of deceased or disabled veterans of World War I, World War II, or the Korean conflict.

Inquiries concerning eligibility should be directed to the Benefits and Facilities Section of a Veterans Administration Regional Office. Veterans planning to study under the law are advised to secure approval for training prior to enrollment. Veterans approved for training should bring V.A. Certificate of Eligibility forms with them when registering in person, or submit them with the mail application forms if registering by mail.

Living Accommodations

The University maintains residence halls for nonresident students in the undergraduate colleges and for those students from Cincinnati or Greater Cincinnati who may wish to live on campus. *No reservation in University residence halls may be made until all admission requirements of the college have been met.* When a student is accepted for admission by a college of the University, an application for living accommodations is sent to him by the Director of Housing Services. This application should be completed and returned promptly.

All freshman and most upperclass students living in University residence halls sign a contract for room and board, which consists of twenty meals per week. Food is available in the University dining halls on Sunday evening although it is not included in the prepaid plan. Upperclass students who live in certain halls may sign a contract for room only. Bed linen is supplied and laundered by the University; towels and blankets are to be furnished by the students.

Men Students. All full-time undergraduate men who do not live in their own homes are required to live in the University residence halls or fraternity houses as long as space is available. When spaces in both University residence halls and fraternity houses are exhausted, students may live in University-approved private homes.

Women Students. All full-time undergraduate women who do not live in their own homes are required to live in University residence halls, or in sorority houses in the case of active members, unless other arrangements are approved by the Office of the Dean of Women. All requests for other arrangements, such as living with close relatives, are considered on an individual basis. Living arrangements must be approved before new students are granted final admission and before returning students may register.

Married Students. Apartment facilities on the campus are available for married students. Application for these facilities may be made *after all admission requirements have been met.* Rental rates vary according to apartment size and will be supplied upon request to students who qualify for occupancy.

Room and Board Charges. Bills for room and board are payable at the time of registration for each Quarter as shown in the calendar for the current year. The charge for room and board in the residence halls on the Clifton Campus for each Quarter is $310.00.

Food Facilities for Commuting Students

Commuting students may obtain meals and refreshments at the Union in the Columbia Room, Over-the-Rhine Room, and Grill, and from "Auto-Snaks" located throughout the campus. Table service in a relaxed atmosphere is available to students and their guests in the Union's Strader Room.

OTHER SERVICES

University Libraries

The Library of the University contains more than 900,000 books and carries subscriptions for 4000 journals. It ranks as one of the main research libraries of the country and offers unusual opportunities for regular study and original investigation in practically any field.

The principal book and periodical collection of the University is housed in the Main Library Building. In addition, 12 departmental and college libraries are maintained in various separate locations on the Clifton Campus and elsewhere in the College of Nursing and Health, and the College of Medicine.

The Main Library is open from 8:00 a.m. to 11:00 p.m. (except Saturday and Sunday when hours are shorter) during the first three Quarters of the academic year. When classes are not in session, the Main Library is open only during the day. During the summer months library hours are reduced.

Library Service Fee. Fee covering a three-month period is charged to persons other than faculty, staff, and students: Residents of Cincinnati or Golf manor, $5.00; All Others, $10.00.

Bookstore

For the convenience of students, the University maintains a bookstore on the ground floor of the Physics Building where textbooks and supplies may be purchased. Throughout the academic year the Bookstore is open Monday through Thursday, 7:30 a.m. to 9:00 p.m.; Friday, 7:30 a.m. to 7:00 p.m.; and Saturday, 7:30 a.m. to 12:00 noon. During Summer School the Monday-Friday hours are 7:30 a.m. to 5:00 p.m.

PART 2

COLLEGE OF ENGINEERING

Administrative Officers and Staff

General Administration

Cornelius Wandmacher, M.C.E., P.E. ..... Dean
123 Baldwin Hall (Ext. 2946)

Janis R. Lyons (Miss), Com.E. (Ext. 2946) ..... Secretary to the College

Robert M. Delcamp, Ph.D. ..... Assistant Dean
102 Baldwin Hall (Ext. 3645)

Kathryn E. Said (Mrs.), B.B.A., M.A. (Ext. 3644) ..... Secretary, Student Academic Services

Herbert A. Dangel, M.E., P.E. ..... Director of Admissions
101 Baldwin Hall (Ext. 3762)

Departmental Offices

R. Paul Harrington, D.Sc., P.E. ..... Head, Aerospace Engineering
219 Baldwin Hall (Ext. 3548)

William Licht, Ch.E., Ph.D., P.E. .... Head, Chemical and Metallurgical Engineering*
130 Chemistry Building (Ext. 2761)

Louis McNeal Laushey, Sc.D., P.E. ..... Head, Civil Engineering†
105 Baldwin Hall (Ext. 3648)

Albert C. Herweh, E.E., M.S. in Engr., P.E. .... Acting Head, Electrical Engineering
100 Swift Hall (Ext. 3741)

Daniel J. Schleef, Ph.D.,P.E. ..... Head, Mechanical Engineering
317 Baldwin Hall (Ext. 2738)

Jacob H. Sarver, M.E., P.E. ..... Head, Engineering Graphics
306 Swift Hall (Ext. 3533)

Philip Marvin, D.B.A., LL.B., P.E., C.F.A. ..... Dean, Professional Development
118 Baldwin Hall (Ext. 4631)

Helen P. Stafford (Mrs.) ..... Engineering Librarian
300 Baldwin Hall (Ext. 3761)

*Includes Nuclear Engineering and Materials Science.
†Includes Environmental Health Engineering.

Faculty and Instructional Staff

As of January 1967

Carl F. Abegg, M.S., Ph.D. ..... Assistant Professor of Chemical Engineering
Edward W. Allis, B.S. ..... Acting Instructor in Mechanical Engineering
John L. Baker, B.S. in C.E., M.S., P.E. ..... Professor of Mathematics
Bruce B. Baldwin, M.E., P.E. ..... Professor of Mechanical Engineering
Alexander B. Bereskin, E.E., M.S. in Engr., P.E. ... Professor of Electrical Engineering
Andrew Bodocsi, M.S. in C.E., Ph.D. ..... Instructor in Civil Engineering
Max L. Brown, M.E., M.S. ..... Assistant Professor of Mechanical Engineering
William R. Bunce, M.A., J.D. ..... Assistant Professor of Coordination
Robert E. Connor, Col., USA, B.A. ..... Professor of Military Science
Joseph B. Conway, Ph.D., Ch.E. ..... Adjunct Professor of Chemical Engineering
Ted K. Cook, B.S. ..... Assistant Professor of Mathematics
Stanley L. Cosgrove, D.Phil. (Oxon.) ..... Associate Professor of Organic Materials
Ralph G. Dale, Jr., Ph.D. ..... Assistant Professor of Aerospace Engineering
Herbert A. Dangel, M.E., P.E. ..... Professor of Mathematics and Director of Admissions
Robert M. Delcamp, Ph.D. ..... Professor of Materials Science and Assistant Dean
L. F. Doty, A.E., Ph.D. ..... Professor of Mechanics
Russell Dunholter, C.E., Ph.D., P.E. ..... Professor of Mechanics
Ronald D. Earley, B.S.M.E. ..... Instructor in Engineering Graphics
LeRoy Eckart, M.E., M.S. ..... Instructor in Mathematics
Rodney P. Elliott, Met.E., Ph.D. .... Associate Professor of Metallurgical Engineering
Odin Elnan, A.E., Ph.D. ..... Associate Professor of Aerospace Engineering
Richard H. Engelmann, M.S., P.E. ..... Professor of Electrical Engineering
Marvin L. English, M.S.M.E. ..... Associate Professor of Mechanical Engineering
Reinhold B. Erickson, B.S. ..... Instructor in Mechanical Engineering
Francis E. Espelage, B.S. .. Laboratory Technician and Instructor in Laboratory Arts
Carl F. Evert, Ph.D., P.E. ..... Professor of Electrical Engineering
J. David Eye, B.S. in C.E., M.S. in San.E., Sc.D., P.E. ..... Professor of Environmental Health Engineering
Harry Ferguson, Ph.D. ..... Associate Professor of Mathematics
H. Kenneth Flint, B.S. in E.E., P.E. ..... Associate Professor of Coordination
Arthur E. Focke, Ph.D., P.E. ..... Associate Professor of Metallurgical Engineering
Robert J. Fopma, B.A. ..... Associate Professor of Mathematics
Harold Franklin, B.S.M.E., M.S.C.E., Ph.D. ..... Assistant Professor of Mechanics
Nathan Gilbert, Ph.D. ..... Professor of Chemical Engineering
*†Theodore W. Gilbert, Jr., Ph.D. ..... Associate Professor of Chemistry
*William A. Grissom, M.E. ..... Instructor in Mechanical Engineering
Charles W. Gruber, M.E. ..... Adjunct Associate Professor of Environmental Health Engineering
Thomas W. Gurbach, M.S. ..... Assistant Professor of Engineering Graphics
Paul V. Guthrie, M.S. ..... Instructor in Metallurgical Engineering

*On leave.
†Associated University Faculty Member.

Donald E. Hagedorn, B.Ch.E. .....Assistant Professor of Engineering Graphics
Robert S. Hahn, M.E., M.S., Sc.D. ....Adjunct Professor of Mechanical Engineering
*†Arthur T. Hamlin, B.A., B.S. in L.S. .....University Librarian and Professor of Bibliography
William R. Harlow, M.A. .....Assistant Professor of Mathematics
R. Paul Harrington, D.Sc., P.E. .....Professor of Aerospace Engineering and Director of the Institute of Space Sciences
Daniel Hershey, Ph.D. .....Associate Professor of Chemical Engineering
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Clair M. Hulley, M.E. .....Assistant Professor of Engineering Graphics
Ronald L. Huston, Ph.D. .....Associate Professor of Mechanics
James P. Hutchins, Ph.D. .....Adjunct Associate Professor of Chemical Engineering
John F. Kahles, Ph.D., P.E. .....Adjunct Professor of Metallurgical Engineering
Richard L. Kegg, M.E., Ph.D. .....Adjunct Assistant Professor of Mechanical Engineering
Albert L. Klosterman, B.S.M.E. .....Instructor in Engineering Graphics
Harry P. Kramer, M.S., Sc.D., P.E. .....Adjunct Associate Professor of Environmental Health
Robert J. Kroll, B.S. in A.E., Ph.D., P.E. .....Associate Professor of Aerospace Engineering
James R. Krusling, C.E., M.S., J.D., P.E. .....Lecturer on Civil Engineering
Louis McNeal Laushey, Sc.D., P.E. .....William Thoms Professor of Civil Engineering
George H. Lee, Ph.D. .....Professor of Aerospace Engineering and Associate Dean of The Graduate School
Robert Lemlich, M.Ch.E., Ph.D., P.E. .....Professor of Chemical Engineering
Jason R. Lemon, B.S.M.E., M.S., Ph.D. .....Associate Professor of Mechanical Engineering
James H. Leonard, Ch.E., Ph.D., P.E. ....Associate Professor of Nuclear Engineering and Director of the Nuclear Engineering Program
*†Gene D. Lewis, Ph.D. .....Associate Professor of History
Robert C. Lewis, C.E., P.E. .....Lecturer on Engineering Science
Ting Yi Li, A.E., Ph.D. .....Adjunct Professor of Aerospace Engineering
William Licht, Ch.E., Ph.D., P.E. .....Professor of Chemical Engineering
†H. David Lipsich, Ph.D. .....Professor of Mathematics
Joseph N. Lockhart, M.A. .....Instructor in Mathematics
*Clarence I. Lubin, Ch.E., Ph.D. .....Professor of Mathematics
Virgil H. Lucke, M.S.M.E., P.E. .....Adjunct Assistant Professor of Mechanical Engineering
H. Jerry Macke, M.S.M.E., Sc.D., P.E. .....Adjunct Associate Professor of Aerospace Engineering

*On leave.
†Associated University Faculty Member.

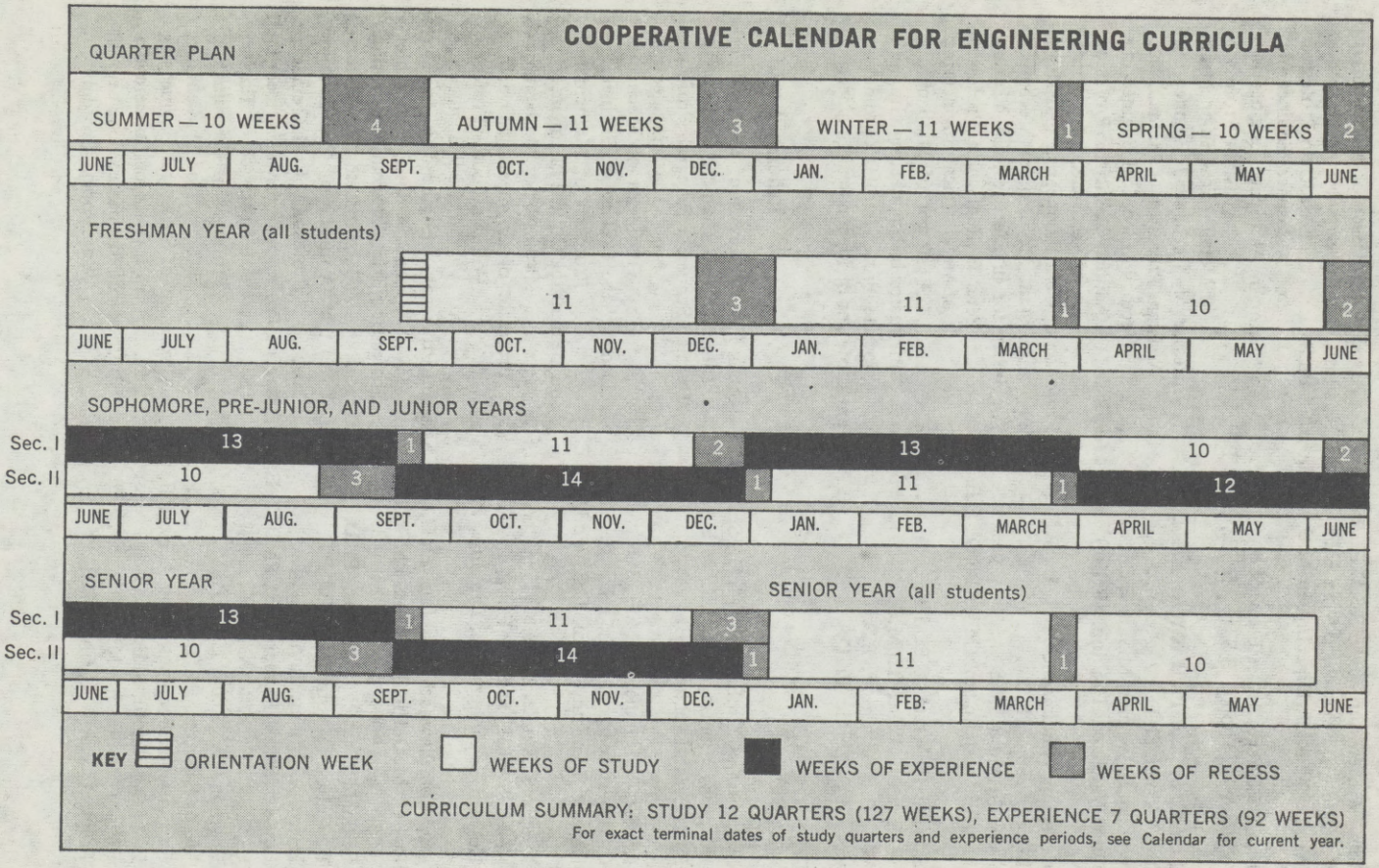
†Philip Marvin, D.B.A., LL.B., C.F.A., P.E. .....Professor of Coordination and Business Administration
†John T. McCarthy, Ph.D. .....Professor of Physics
James F. McDonough, M.S. in C.E. .....Instructor in Civil Engineering
Frank M. Mellinger, M.S. in E.M., P.E. .....Lecturer on Civil Engineering
M. Eugene Merchant, B.S.M.E., M.S., Sc.D., P.E. .....Adjunct Professor of Mechanical Engineering
William H. Middendorf, Ph.D., P.E. .....Professor of Electrical Engineering
George Donald Moon, Jr., B.Ch.E., P.E. .....Associate Professor of Chemical Engineering
James M. Morand, C.E., Ph.D. .....Assistant Professor of Civil Engineering
Ivan E Morse, Jr., Ph.D. .....Professor of Mechanical Engineering
Billy D. Mullins, B.S.E.E. .....Instructor in Electrical Engineering
Robert L. Myers, B.S. in Ed., M.A. .....Instructor in Mathematics
Haruo Oguro, Sc.D. .....Associate Professor of Aerospace Engineering
Kenjiro Okamura, M.S., Ph.D. .....Visiting Professor of Mechanical Engineering
Carl H. Osterbrock, E.E., Ph.D. .....Associate Professor of Electrical Engineering
John N. Pattison, Ph.D. .....Acting Research Professor in Environmental Health Engineering
Ralph E. Peters, A.E. .....Associate Professor of Coordination
Charles F. Pinzka, Ph.D. .....Assistant Professor of Mathematics
Arnold Polak, M.S., Dipl.Ing., Ph.D. ...Assistant Professor of Aerospace Engineering
Herbert C. Preul, Ph.D., C.E., P.E. .....Associate Professor of Civil Engineering
Robert H. Price, Ph.D. .....Professor of Materials Science
Robert H. Raible, E.E., Ph.D. .....Assistant Professor of Electrical Engineering
Bruce A. Raymond, A.E., M.S. .....Assistant Professor of Mathematics
William E. Restemeyer, E.E., M.A., P.E. .....Professor of Applied Mathematics
Boyd C. Ringo, B.S. in Arch. Engr., M.S. in C.E. Ph.D., P.E. .....Professor of Civil Engineering
Alan J. Rubin, B.S. in C.E., M.S. in San.E., Ph.D. .....Assistant Professor of Civil Engineering
Jacob H. Sarver, M.E., P.E. .....Professor of Engineering Graphics
Sundaram Sastry, M.A. .....Instructor in Mathematics
Pasquale V. Scarpino, Ph.D. .....Associate Professor in Sanitary Engineering
Alfred W. Scheide, E.E., M.S. .....Instructor in Electrical Engineering
Daniel J. Schleef, Ph.D., P.E. .....Professor of Mechanical Engineering
James T. Scroggin, M.S.M.E. .....Instructor in Mechanical Engineering
*William Robert Shapton, M.S.M.E. .....Instructor in Mechanical Engineering
James Sheng, B.S.M.E., M.S., Ph.D. .....Professor of Aerospace Engineering
James E. Sherlock, M.E. .....Instructor in Mechanical Engineering
Carl P. Singer, B.S., M.A. .....Instructor in Mathematics
Gary L. Slater, As.E., M.S. .....Instructor in Aerospace Engineering
John F. Stephens, M.S.M.E. .....Instructor in Mechanical Engineering
Richard E. Strenk, B.A., M.S. .....Instructor in Mathematics
†Warren F. Stubbins, E.E., Ph.D. .....Professor of Physics
Walter E. Stueck, Lt. Col., USAF, B.S. in Com. .....Professor of Air Science

*On leave.
†Associated University Faculty Member.

John Warren Surbaugh, B.S.M.E., P.E. .....Associate Professor of Mathematics
Bronson W. Sweeney, B.S. in E.E. .....Instructor in Engineering Graphics
Widen Tabakoff, Dipls.Ing. in M.E. and in A.E., Ph.D. .....Associate Professor of Aerospace Engineering
Frank R. Tepe, Jr., A.E., M.S. .....Instructor in Aerospace Engineering
William H. Tholke, B.S. in Met.E., M.S., P.E. .....Assistant Professor of Metallurgical Engineering
Francis S. Tse, Ph.D. .....Professor of Mechanical Engineering
Y. G. Tsuei, Ph.D. .....Assistant Professor of Mathematics
William S. Wagner, M.S. in E.E. .....Instructor in Electrical Engineering
Otto Walchner, Dipl.Ing. (Berlin) .....Adjunct Associate Professor of Aerospace Engineering
Cornelius Wandmacher, M.C.E., P.E. .....Professor of Civil Engineering and Dean
I-Chih Wang, Ph.D. .....Assistant Professor of Mechanics
Kuo Un Wang, M.S. .....Instructor in Electrical Engineering
Fred E. Westermann, Ch.E., Ph.D., P.E. .....Peter E. Rentschler, Professor of Metallurgical Engineering
Edward F. White, C.E., P.E. .....Professor of Mathematics
W. Edward White, B.S.M.E. .....Instructor in Engineering Graphics
Wm. P. Williamson, B.S. .....Associate Professor of Coordination
Ronald D. Zerkle, Ph.D. .....Assistant Professor of Mechanical Engineering

Emeriti Faculty

Louis Brand, Ch.E., E.E., Ph.D., Sc.D. .....Professor of Mathematics
Joseph W. Bunting, B.S.M.E., M.E., P.E. .....Professor of Mechanical Engineering
Hans Ernst, Dipl. in M.E. .....Herman Schneider Research Professor of Engineering
Robert E. Hundley, B.M.E., P.E. .....Professor of Mechanics
C. Albert Joerger, M.E., P.E. .....Dean of the College of Engineering
Howard Kenneth Justice, C.E., Ph.D., P.E. .....Professor of Mathematics and Dean of the College of Engineering
Joseph H. Kindle, M.A. .....Professor of Mathematics
A. H. Knebel, M.E., P.E. .....Professor of Engineering Graphics
Howard B. Luther, S.B., Dipl.Ing., P.E. .....William Thoms Professor of Civil Engineering
David Mazkewitsch, Dipl.Ing., Ph.D. .....Assistant Professor of Engineering Graphics
Roy O. McDuffie, B. Chem., Ph.D., P.E. .....Peter E. Rentschler Professor of Metallurgical Engineering
Reginald Charles McGrane, Ph.D. .....Professor of History
H. Calvert Messinger, M.E., P.E. .....Professor of Coordination
Harry L. Miller, Ph.D. .....Professor of Mathematics
Lewis Franklin Palmer, C.E., Ph.D., P.E. .....Associate Professor of Civil Engineering
Clyde W. Park, M.A. .....Professor of English
Raymond W. Renn, C.E., P.E. .....Professor of Coordination
Meyer Salkover, Ph.D. .....Professor of Mathematics
Bartholomew Jennings Shine, C.E., P.E. .....Professor of Structural Engineering
Edward S. Smith, M.E., Ph.D. .....Professor of Mathematics
Reuel L. Smith, B.S.M.E., P.E. .....Professor of Mechanical Engineering
Ralph A. Van Wye, Ch.E., P.E. .....Professor of Coordination


COOPERATIVE CALENDAR FOR ENGINEERING CURRICULA
QUARTER PLAN
SUMMER — 10 WEEKS
4
AUTUMN — 11 WEEKS
3
WINTER — 11 WEEKS
1
SPRING — 10 WEEKS
2
JUNE JULY AUG. SEPT. OCT. NOV. DEC. JAN. FEB. MARCH APRIL MAY JUNE
FRESHMAN YEAR (all students)
11
3
11
1
10
2
JUNE JULY AUG. SEPT. OCT. NOV. DEC. JAN. FEB. MARCH APRIL MAY JUNE
SOPHOMORE, PRE-JUNIOR, AND JUNIOR YEARS
Sec. I
13
1
11
2
13
10
2
Sec. II
10
3
14
1
11
1
12
JUNE JULY AUG. SEPT. OCT. NOV. DEC. JAN. FEB. MARCH APRIL MAY JUNE
SENIOR YEAR
SENIOR YEAR (all students)
Sec. I
13
1
11
3
Sec. II
10
3
14
1
11
1
10
JUNE JULY AUG. SEPT. OCT. NOV. DEC. JAN. FEB. MARCH APRIL MAY JUNE
KEY
ORIENTATION WEEK
WEEKS OF STUDY
WEEKS OF EXPERIENCE
WEEKS OF RECESS
CURRICULUM SUMMARY: STUDY 12 QUARTERS (127 WEEKS), EXPERIENCE 7 QUARTERS (92 WEEKS)
For exact terminal dates of study quarters and experience periods, see Calendar for current year.

GENERAL INFORMATION

For general information on the University of Cincinnati, see Part 1, pages viii-xi.

Objectives

In addition to the general support of the over-all University objectives, the specific functions of the College of Engineering are: To provide opportunity for study in those areas pertinent to the professional, cultural, and personal development of engineering students; to contribute to the advancement of knowledge in the fields of engineering and science through basic and applied research and development; and to link education and industry under the Cincinnati Cooperative Plan of correlating classroom theory and practical experience.

History of the College

Programs of engineering studies at the University date back to 1874 when a professorship of civil engineering was instituted. Engineering was organized as a department of the University in 1900 and in 1905 became the College of Engineering with a designated faculty.

A unique contribution to higher education was made by the College in 1906 when the late Dean Herman Schneider originated the study-experience system now known throughout the world as the Cincinnati Cooperative Plan. Twenty-seven of the 134 students then in the College were selected for the cooperative program. Fifteen cooperating companies provided a series of one-week periods of practical experience.

A merger in 1919 resulted in the establishment of the College of Engineering and Commerce which during 1920 went entirely on the cooperative system. At that time the period of alternation between study and experience periods was changed from two to four weeks; there were 950 students and 150 cooperating firms.

Architecture became a department within the College in 1922. With the expansion of course offerings in related fields, additional enrollment resulted by 1925 in the formation of the School of Applied Arts.

Continued growth in all aspects of the cooperative program led to a major reorganization in 1946 which created three distinct units, the College of Engineering, the College of Business Administration, and the College of Applied Arts (now Design, Architecture, and Art), each with its own facilities and faculty. By this time the academic year consisted of three seven-week terms for each section of cooperative students.*

In 1959 a Graduate Cooperative Program was instituted thereby extending the cooperative system to study for advanced engineering degrees.

A quarter-system schedule was adopted in 1963 thus placing the College of Engineering and all other components of the University on the same academic calendar.

Currently the enrollment in the cooperative curricula of the three participating colleges of the University is over 3500, of which nearly 1800 students are in engineering. There are over 800 cooperating firms.

*For a more detailed account of the origin and growth of the cooperative system, refer to "Ambassador to Industry—The Idea and Life of Herman Schneider" by Clyde W. Park, 1948 Bobbs Merrill & Co.

The Cooperative Professional Practice Program

The Cooperative Professional Practice Program offers the student an opportunity for selected practical experience purposefully intermingled with a gradually expanding academic background. This unique college program was originated at the University of Cincinnati in 1906.

Basically the plan provides for three-month periods of structured internship assignments alternating with three-month study periods starting with the second year and terminating in the fifth year. The year-round schedule permits each student to have seven Quarters of meaningful professionally-related experience before graduation. Thus he obtains firsthand knowledge of professional practices and opportunities. The student is thereby afforded, during his college years, a realistic test of his career interests and aptitudes.

A typical year consists of 21 weeks of study, 26 weeks of correlated experience, and 5 weeks of recess or vacation. Students are divided into two alternating sections. Full-time classroom attendance is scheduled the freshman year. At the end of the first year, students with satisfactory scholastic records may begin the internship phase and continue on an alternating basis until two Quarters before graduation. The over-all curriculum consists of 127 weeks of study and 92 weeks of practical experience.

Internship assignments are made in over 800 engineering firms, manufacturing industries, research laboratories, public utilities, construction companies, and agencies of federal, state, and local governments located in 155 cities and 30 states.

Students are placed on internship assignments by a full-time faculty of the Department of Coordination and meet with this faculty in a series of class sessions and individual conferences. Industrial personnel executives evaluate each student through performance reports. These ratings are used as a basis for counseling students and planning future assignments.

The University makes no guarantee as to internship assignments or earnings, but does make every effort to place students to their best educational advantage. Geographic location, section assignments, and earnings must be secondary considerations in the interests of the over-all objective of providing the student with the best training opportunities. All assignments must initiate with or be approved by the designated faculty member.

Students are subject to all regulations of the company by which they are engaged and all existing labor conditions and laws. Earnings of the students are usually determined by the location and type of work to which they are assigned and are received by the student directly from the employer.

Degrees

The curricula of the College of Engineering lead to the following degrees:

Bachelor of Science in Aerospace Engineering
Bachelor of Science in Chemical Engineering
Bachelor of Science in Civil Engineering
Bachelor of Science in Electrical Engineering
Bachelor of Science in Mechanical Engineering
Bachelor of Science in Metallurgical Engineering

The requirements for each degree are established by the Faculty upon the recommendation of the respective departments.

A student who completes the requirements for a degree and satisfactorily completes six or more cooperative experience Quarters will be recommended also for a "Certificate of Cooperative Experience."

Each applicant must file a formal application for his degree. This application is to be made in the Office of Student Academic Services of the College by February 1 of the year in which the degree is anticipated. If the senior fails to make this application, the University will not be responsible for his graduation.

Degrees are not conferred *in absentia*, except by special permission from the President.

Master's and Doctoral Programs

Advanced study in Engineering leading to Master's and Doctor's degrees is offered by all departments of the College. For complete information about these programs and information concerning scholarships and the Cooperative Graduate Fellowship Program, consult the *Bulletin* of The Graduate School.

Baccalaureate Admission Requirements

For general information on admission requirements see Part 1, pages ix-x.

Requirements for Admission. Well-qualified students whose applications are received prior to March 15 may generally be assured of admission to the class entering in September. Applicants must meet the following requirements:

(1) Candidates must be graduates of accredited high schools, generally in the upper one-third of the graduating class.

(2) Sixteen units of high school preparation are required, as specified in Groups A, B, and C:

Group A (10 units)

English	4 units
Mathematics	4 units
Chemistry	1 unit
Physics	1 unit

Group B (4 units)

From any of the following subjects:
English, foreign language, mathematics, chemistry, physics, general science, biology, zoology, botany, astronomy, geology, physiology, physical geography, commercial geography, economic geography, history, civics, economics, and sociology ..... 4 units

*Group C (2 units)

May be chosen from any other subjects in which credit for graduation has been allowed in the secondary schools ..... 2 units

(3) Scores for either the Scholastic Aptitude Test of the College Entrance Examination Board (SAT) or the American College Testing Program Examination (ACT) are used for counseling purposes and as criteria in the computation of such predicted grade-point averages as may be required for admission. Therefore, such scores must be submitted before final acceptance for admission. The Level 1 Mathematics Achievement Test (M1) of the College Entrance Examination Board is also required before admission.

*Any excess credit offered in Groups A and B may be applied in Group C.

Most successful applicants have grades of at least 80 percent in mathematics and science and have standing in the upper third of the graduating class. However, graduation from high schools preparing principally for college entrance and participation in advanced placement courses are found to be equally important factors.

Although no minimum age is set for admission, those students who are not eighteen years old by June of their freshman year may be restricted in the cooperative assignment in accordance with federal and state laws pertaining to employment of minors.

All transcripts presented for admission must specify all courses taken, the time devoted to each subject, the grade received in each course, and class standing. Blank forms are furnished upon application to the Director of Admissions of the College of Engineering or to the Central Admissions Office.

An applicant's transcript should be sent to the Central Admissions Office, University of Cincinnati, Cincinnati, Ohio 45221. If it is satisfactory, the candidate is informed that he is eligible for admission.

Advanced Standing. Credit may be allowed for college level courses equivalent to required courses of the curricula of this College. Such courses must have been completed within recent years and with better-than-minimum passing grades. All advanced standing credits are tentative until a student has completed in a satisfactory manner at least one year of course work in the curriculum to which he is admitted.

Scholastic Standing Requirements

In general, a C average is required for a student to be considered in good standing. Averages are computed on the basis of the quality points assigned for each letter grade, as outlined in Part 1 of this *Bulletin.*

A student will be classified as a candidate for a degree after he has completed all subjects of the first six Quarters of his curriculum with a C average.

A senior-year student will be recommended for a degree when he has completed all requirements of his chosen curriculum and has attained an average of C or better for all courses taken since becoming a candidate for a degree.

A student will be graduated with High Honors if he achieves an over-all average of 3.55 or better, and with Honors if his over-all average is 3.25 or better.

At the end of each Quarter a student who has passed all courses and earned an average of 3.40 or better in a program of 12 credits or more will have his name placed on the Dean's Honor List.

A student whose average, both cumulative and for any Quarter, falls below 2.00 is subject to appropriate action for poor scholarship.

Complete details about these and related matters are available to students in a separate booklet, "Student Guide," issued by the College of Engineering through the Office of Student Academic Services.

STUDENT PERSONNEL PROGRAM

For general information concerning the student personnel program, see Part 1, pages xviii-xxii.

Student Activities and Organizations

The College of Engineering encourages participation in student activities insofar as they contribute to the student's personal and social development, and supplement his academic and professional education.

Student Government. The Engineering Tribunal is composed of student representatives of the several professional departments and classes of the College. It serves to stimulate, coordinate, and direct various student activities. The Tribunal also provides liaison with the Student Council of the University.

Publication. The *Cooperative Engineer* is the official student publication of the College. It is issued quarterly in magazine form.

Professional Societies. Membership in the student branches or clubs of the following professional societies is open to students in specific fields of professional education:

Alpha Chi Sigma — Chemistry (Men)
American Institute of Aeronautics and Astronautics
American Institute of Chemical Engineers
American Society of Civil Engineers
American Society of Mechanical Engineers
American Society for Metals
Institute of Electrical and Electronic Engineers
Society of Automotive Engineers

Honor Societies. In addition to the all-University honor societies, the following confer membership on students in the College of Engineering in recognition of high scholarly attainment and outstanding achievement in the areas indicated:

Alpha Sigma Mu	—Metallurgical Engineering
Chi Epsilon	—Civil Engineering
Eta Kappa Nu	—Electrical Engineering
Phi Lambda Upsilon	—Chemistry (Men)
Pi Tau Sigma	—Mechanical Engineering
Tau Beta Pi	—All Engineering

Scholarships, Awards, and Loan Funds

For general information concerning scholarships and other forms of financial aid, see Part 1, page xx.

Scholarships.

Industrial Scholarships in the College of Engineering. A number of industrial firms annually award scholarships in the College of Engineering to outstanding high school seniors on the basis of academic achievement, aptitude tests, interviews by the company officials, and, in most cases, competitive examinations in

mathematics and English prepared by the College of Engineering. To compete for such a scholarship the student must in general be graduating from a high school in the county or area of the company's operations and must file with the company the University of Cincinnati Application for an Industrial Scholarship. Unless otherwise stated in what follows, this admission form should be obtained from personnel directors of the various companies or from principals and counselors of neighboring high schools. In most cases the company provides cooperative experience for its scholarship winners. More detailed information follows:

The Armco International, Division of Armco Steel Company, Scholarship. One scholarship of $3600, of which $2400 is for the freshman year and $1200 for the senior year in engineering, awarded annually to a foreign student who is the son of a full-time employee of AIC or of a foreign subsidiary.

Avco Corporation—Electronics Division, Cincinnati, Scholarships. A number of scholarships not to exceed twelve, of $500 each for juniors and seniors in electrical engineering to be awarded annually to Avco employees.

The Avey Drilling Machine Company Scholarships. Two scholarships of $500 each to be awarded annually to students of mechanical engineering from the Greater Cincinnati area who have completed their first year.

The Bauer Brothers Company Scholarships. Two scholarships of $600 each for the freshman year in mechanical, chemical, electrical, or metallurgical engineering available annually to male graduates from the high schools of Clark County.

The Steffen Brown Foundation Scholarships, sponsored by the Dyna Corporation, Dayton, Ohio. Four scholarships for the freshman year of $1200 each to be awarded annually to male students in electrical, mechanical, or metallurgical engineering who graduate from high schools in Montgomery and nearby counties.

The Century Electric Scholarships. Four scholarships of $3000 each, of which $1400 is applicable to the first year and $400 to each of the remaining four years of engineering (preferably mechanical or electrical engineering), available annually to seniors in high schools in St. Louis and St. Louis County, Missouri.

The Cincinnati Gas and Electric Company Scholarships. Two scholarships for students of electrical engineering covering full fees for the first year and half fees during the remaining four years to be awarded annually to seniors in high schools in Ohio, Kentucky, and Indiana adjacent to the Greater Cincinnati area.

The Cincinnati Milling Machine Company Scholarships. Four scholarships of $1600 each, of which $1000 is for the freshman year, $200 for the sophomore year, and $400 for the senior year, available annually to applicants for mechanical or electrical engineering (or in exceptional cases metallurgical or chemical engineering) from Adams, Brown, Butler, Clermont, Clinton, Hamilton, Highland, and Warren Counties in Ohio, and from Boone, Campbell, and Kenton Counties in Kentucky.

Clark Brothers Company Scholarships. A limited number of scholarships of $1000 each, of which $500 is applicable to the first year and $125 to each of the remaining four years available annually, to students in mechanical engineering from the immediate neighborhood of Olean, New York.

The Dayton Malleable Iron Company Scholarships. Two engineering scholarships of $4410 each, of which $1600 is applicable to the first year, $670 to the second, third, and fourth years, and $800 to the senior year, available annually, or as specified by the company, to graduates of high schools in the Ironton, Ohio area.

The Deeds Scholarship. One freshman scholarship for $1500, awarded annually by the National Cash Register Company to the son or daughter of an NCR employee, for chemical, civil, electrical, mechanical, or metallurgical engineering.

The Douglas Aircraft Company Scholarship. An $800 scholarship awarded annually to an outstanding and deserving senior in aerospace or electrical engineering.

Dow Chemical Company Scholarships. Two scholarships of $1000 each to be awarded annually to freshman students in chemical, civil, electrical, mechanical, or metallurgical engineering from the Midland, Michigan area.

The Electric Furnace Company Scholarships. Two scholarships of $1500 each, of which $1250 is applicable to the first year and $250 to the senior year available annually to company employees and sons of employees and to high school seniors in Columbiana County, Ohio, and in the Ohio cities of Goshen, Greenford, Sebring, and Alliance.

Engineering Society of Cincinnati Scholarships. Two scholarships of $300 each for the freshman year in engineering, available annually to high school seniors from Butler, Clermont, and Hamilton Counties in Ohio and from Boone, Campbell, and Kenton Counties in Kentucky.

Foundry Educational Foundation Scholarships. One or more scholarships of $350 each, awarded annually to high-ranking seniors in metallurgical engineering and mechanical engineering.

Hamilton Cooperative Engineering Scholarship Awards. One or two engineering scholarships, each for $3000, of which $1200 is for the freshman year, $400 each for the second, third, and fourth years, and $600 for the fifth year, established by the Hamilton Community Foundation and made available annually, or as stipulated by the Foundation, to seniors of Hamilton (Ohio) high schools.

Harris-Intertype Corporation Graphic Arts Scholarship. One $1500 award for the freshman year in mechanical engineering given to a high school senior in a community where the corporation operates division or subsidiary plants and maintains offices. (Principal plant locations: Cleveland and Dayton, Ohio; Brooklyn, New York; Westerly, Rhode Island; and Quincy, Illinois.)

The Interchemical Foundation Scholarships. Two scholarships of $250 each, available to students in chemical engineering who have completed the first two years.

Bradley Jones Memorial Scholarship. An annual award to that senior in aerospace engineering who is deemed to be most outstanding in terms of scholarship, character, personality, and general achievement.

The Carl J. Kiefer Memorial Scholarship. One freshman scholarship for $600 available annually to a male applicant for engineering from the Greater Cincinnati area.

Koppers Company, Inc., Scholarships. One or more scholarships for juniors or seniors in chemical engineering.

The R. K. LeBlond Memorial Scholarships. Two scholarships of $1400 each, of which $950 is applicable to the first year and $450 for the senior year, available annually in mechanical engineering to sons of company employees and male high school seniors of Greater Cincinnati.

The Link-Belt Company Scholarships. Two scholarships of $750 each for the freshman year to be awarded annually to seniors from Indianapolis and Marion County, Indiana, who plan to study chemical, mechanical, or metallurgical engineering.

The Lubrizol Corporation Scholarships. Two scholarships of $500 each to be awarded annually to students in chemical or mechanical engineering who have completed one or more years of study. Offered by The Lubrizol Corporation, Cleveland, Ohio.

The Martin Marietta Aerospace Freshman Scholarship. George M. Bunker, President of the Martin Marietta Company, has established a fund which will provide at least one scholarship, covering fees for the freshman year, to be awarded annually to an applicant for aerospace, civil, mechanical, or electrical engineering who is a high school senior in the State of Maryland or the District of Columbia. Application blanks should be requested from the College of Engineering.

New Castle Products, Incorporated, Scholarships. One or more scholarships of $1000 each for the freshman year in chemical, electrical, or mechanical engineering, awarded annually to seniors of high schools in Henry, St. Joseph, and Wabash Counties in Indiana and to sons of company employees.

Olin Mathieson Chemical Corporation Scholarships. Two scholarships of $800 each for the freshman year in metallurgical engineering available annually to high school graduates from the Upper Ohio Valley.

Radio Corporation of America Scholarships. One scholarship of $800, or two of $400, available annually to one or two upperclassmen in electrical engineering.

SETCO Industries, Inc., Scholarships. Two scholarships of $1,000 each, of which $500 is applicable to the second year and $500 to the senior year, available annually to students in electrical or mechanical engineering from the Greater Cincinnati area.

Albert P. Strietmann Scholarships. Two five-year scholarships totaling $4250 each, endowed by the United Biscuit Company of America, for fees, books, and living expenses of two outstanding and needy students in mechanical or chemical engineering from the Greater Cincinnati area.

Surface Combustion Division of Midland-Ross Corporation Scholarships, sponsored by the Surface Industrial Division at Toledo, Ohio. Two scholarships of $1250 each, of which $1000 is applicable to the freshman year and $250 to the senior year. These scholarships are available annually to selected, Toledo area, male high school seniors with engineering aptitudes in chemical, mechanical, metallurgical, or civil engineering.

The Triplett Electrical Instrument Company Scholarships. Two scholarships of $1000 each, of which $800 is applicable to the first year and $200 to the second year, awarded to graduates of high schools in the vicinity of Bluffton, Ohio, who plan to study electrical or mechanical engineering.

U. S. Navy Marine Engineering Laboratory Educational Assistance Program. Individual programs of educational assistance are available each year for qualified high school students interested in working for a degree in chemical, electrical, mechanical, or metallurgical engineering. Application should be made through the College of Engineering.

The Earle J. Wheeler Scholarships. Three scholarships of $300 each to be awarded annually to worthy civil engineering students.

Miscellaneous Scholarships. Many companies, foundations, national societies, and various other organizations annually award scholarships in engineering to outstanding high school seniors irrespective of the student's choice of institution. High school principals are normally advised of the availability of such scholarships by the sponsor.

Scholarships in limited amounts are available to upperclassmen in the College of Engineering from income derived from the following funds: Ferro Concrete Construction Company, Karl Kiefer, J. Evans Lippincott, the Herman Schneider Memorial, and Charles Schreiber.

Awards. Each year a number of awards recognizing outstanding scholarship and leadership are presented at the Annual Engineering College Recognition Day. These include:

The Herman Schneider Medal for distinction as an exemplary cooperative student.

Senior Ring Award by the Engineering Tribunal for outstanding service to the University and to the College.

Tau Beta Pi Awards: One to an outstanding senior and another to an outstanding freshman.

Eugene A. Carsey Awards: Ten awards of a one-year membership in the Engineering Society of Cincinnati to deserving seniors who plan to reside in Cincinnati after graduation.

In addition, a number of departmental awards are made each year. Scholarships, fellowships and other honors are announced.

Loan Funds. Restricted loans are made in cases of need from funds established by: Frederick A. Geier, Lodge and Shipley Machine Tool Company, Abram and Yetta Newburgh, Ferdinand L. Weston Memorial, and the Cooperative Club.

STUDENT FEES

For general information on fees, see Part 1, pages xii-xvi.

Student fees are payable at the beginning of each academic Quarter in accordance with the following schedule:

Residents, Cincinnati and Golf Manor	$225.00
Residents, Other Ohio	385.00
Nonresidents	400.00
Nonresidents entering baccalaureate programs after September 1965	430.00

The University is negotiating with the Ohio Board of Regents as to an affiliation with the State of Ohio. This negotiation may result in student fee reductions for residents of Ohio.

ENGINEERING CURRICULA

All students of this College study under the cooperative plan. The five-year curriculum includes 127 weeks of campus study and 92 weeks of related practical experience. Details are outlined in the Calendar and the Cooperative Professional Practice Program sections of this *Bulletin.*

Although the various curricula have different advanced professional courses, all curricula require the same basic courses. During the first two years, all curricula uniformly provide a concentration in the basic sciences of chemistry, physics, and mathematics, which are the roots of engineering. Emphasis is placed also on the comprehension and use of the communication skills of English, graphical representation, and mathematical descriptions. These are the verbal, pictorial, and symbolic languages of the engineering community.

A bridge to the areas of engineering practice is provided through the applied sciences, termed "engineering sciences," including solid mechanics, fluid mechanics, thermodynamics, heat and mass transfer, electrical sciences, nature and properties of materials, strength of materials. At least one basic course in each of these areas is included in the curriculum of all engineering students.

The series of distinctive professional department courses embodies the principles of engineering design as applied to structures, machines, processes, systems, and controls. Electives and senior projects provide for specialization according to the individual interests of the student. The electives also provide a natural transition and adequate preparation for the increasing number of students who will continue their education toward advanced degrees at the graduate level.

Analytical work of the engineering classroom is frequently coordinated with laboratory work to insure that the student acquires both a familiarity with experimental equipment and procedures, and a thorough understanding of the relationships of theory, experiment, and practice.

All curricula prepare the student for later practice in the central engineering functions of design and consulting, as well as in the professional areas relating to construction, production, operation, maintenance, management, sales, research, and development.

A continuum of courses in the humanities is an integral part of each curriculum. The sequence of courses serves to widen the horizon of the student, to awaken his potential cultural interests, to prepare him for a satisfying and effective career in his community, and to provide for continued growth throughout his career; it aims to develop his initiative, vision, and imagination, as well as a sense of responsibility for the contributions which can be made for the benefit of mankind.

Students may apply for the Humanities Reading Program, which is designed to continue the curricular studies throughout the cooperative experience periods. While off campus, students read selected literature and meet in discussion sessions when they return to the campus.

In the curricula which follow, one Quarter credit is given for each one-hour period of lecture and for each four hours of total time required in a laboratory course. The average student may expect to spend at least two hours outside of class in preparation for each hour of lecture, but it is the student's responsibility to utilize his time to his own best advantage.

The freshman year is the same for all engineering curricula. While entering students are required to indicate a choice of department, this selection can be changed up to the sophomore year without loss of course credit.

Freshman Year (55 cr.)

		Autumn			Winter			Spring		
*No.	Course Title	Cr.	Lec.	Lab.	Cr.	Lec.	Lab.	Cr.	Lec.	Lab.
(15)-001-101,2,3	Freshman English I,II,III.	3	3	0	3	3	0	3	3	0
-025-170	Mathematical Analysis ..	3	3	0						
-025-221,2,3	Calc.& Anal. Geom. I,II,III	4	4	0	5	5	0	5	5	0
-031-111,2	Mechanics I, II				4	4	0	4	4	0
(15)-035-121,2,3	General Chemistry I,II,III	3	3	0	3	3	0	3	3	0
(15)-035-131,2,3	Gen'l. Chem. Lab. I,II,III	1	0	3	1	0	3	1	0	3
-272-171,2,3	Graphics I, II, III	3	2	4	3	1	5	3	1	5
		17	15	7	19	16	8	19	16	8

Modified Program

It is possible for entering students with high scholastic standing in college preparatory work to take a modified program. Decision on the modified program may be made at the time of registration.

Students may also qualify for a modified program through the Advanced Placement procedure. See Part 1 of this *Bulletin* under "General Requirements for Admission to the Undergraduate Colleges."

*College Code prefix for all courses in this table is 20-, unless otherwise noted in parentheses.

Aerospace Engineering

The scope of aerospace engineering is extremely broad, encompassing the physics of gas flow, heat transfer, dynamics of flight, analysis of complex structural problems, principles of jet and rocket propulsion systems, and the study of vehicle performance. The course of study is directed toward the analysis and design of aircraft and missiles for every conceivable application at altitudes from zero to infinity and at vehicle speeds ranging from relatively low velocities to many times the speed of sound. The curriculum is designed to prepare students in the fundamentals of basic science and engineering sciences for professional positions in the rapidly advancing aeronautical and space industry. A balance between theory and application enables the graduate to do effective work in design, research and other areas of engineering practice.

The course structure of the curriculum has been arranged to develop the student's background in mathematics, physics and engineering science during the first three years of study. The courses offered during the fourth and fifth years are devoted to engineering practice and to increasing the student's engineering science background with courses oriented toward actual flight vehicle application. Each student takes integrated sequences of courses in the areas of aerodynamics and heat transfer, reactive propulsion systems, structural mechanics and flight mechanics; he is also introduced to the concept of system analysis as a development tool.

Through the department laboratories, experimental techniques applicable to the areas of structural and fluid dynamic analysis and propulsion system developments are considered as an integral part of the over-all course structure. Class demonstrations and student experiments provide a physical foundation for the mathematical formulations of theoretical analysis. Where appropriate, emphasis is placed on synthesis and basic techniques for the application of theory to the solution of engineering problems. This is implemented by the early introduction of analog and digital computer techniques.

Practical experience in the application of academic studies is gained by means of cooperative work in the aerospace industry, in government laboratories, or on departmental research projects.

The aerospace engineering curriculum, by its very scope of problem areas, is and must be broad and thorough. Regardless of the career objectives of students earning degrees in aerospace engineering, they are well prepared in fundamentals and the application of these basic concepts to the solution of a wide variety of engineering problems. This type of undergraduate curriculum also provides a sound background for those students desiring to pursue graduate work leading to advanced degrees.

For the schedule of the freshman year in aerospace engineering, see p. 17.

Technical Electives Offered by Aerospace Engineering

251-272	Experimental Stress Analysis	251-574	Propulsion Systems
251-342	Dynamics of Ideal Fluids I	251-576	Rocket Propulsion
251-343	Dynamics of Ideal Fluids II	251-578	Advanced Vibrations
251-444	Gas Dynamics I	251-582	Combustion Theory
251-445	Gas Dynamics II	251-584	Random Vibrations
251-547,8	Advanced Structural Theory	251-586	Performance Optimization
251-571	Solid Body Mechanics	251-588	Introduction to Astronautics
251-572	Trajectory Dynamics		

Aerospace Engineering Curriculum

Sophomore Year (39 cr.)

Summer or Autumn					Winter or Spring				
*No.	Course Title	Cr.	Lec.	Lab.	*No.	Course Title	Cr.	Lec.	Lab.
(15)-075-†	History I	3	3	0	(15)-075-†	History II	3	3	0
031-113	Mechanics III	4	4	0	031-375	Basic Strength	3	3	0
030-202	Physics II	5	4	2½	030-203	Physics III	5	4	2½
025-224	Calc. & Anal. IV	5	5	0	031-381	Basic Thermo.	4	4	0
251-271	Intro. Aero. Engr.	2	2	0	025-272	Diff. Equations	3	3	0
000-099	Intern. Assign.	.	.	.	272-273	Computer Progr.	1	0	3
		19	18	2½	000-202	Intro.Profl.Prac.I	1	1	0
					000-099	Intern. Assign.	.	.	.
							20	18	5½

Pre-junior Year (37 cr.)

(22)-080-451	Economics I	3	3	0	(22)-080-452	Economics II	3	3	0
031-373	Nat.&Prop.Mater.	4	4	0	260-374	Electromag. Flds.	3	3	0
031-383	Bas. Fluid Mech.	4	3	3	031-385	Bas. Heat Trans.	3	3	0
031-372	Basic Elec. Net.	4	3	3	025-276	Linear Algebra	3	3	0
025-371	Advanced Math.	3	3	0	251-342	Ideal Fluids I	2	2	0
251-272	Exp. Stress Anal.	1	0	4	251-372	Appl. Aerodyn.	4	3	3
000-099	Intern. Assign.	.	.	.	000-099	Intern. Assign.	.	.	.
		19	16	10			18	17	3

Junior Year (36 cr.)

(15)-001-‡	Literature I	3	3	0	(15)-001-‡	Literature II	3	3	0
263-485	Mech. Vibratns. I	4	3	3	025-375	Numerical Anal.	3	3	0
251-343	Ideal Fluids II	3	3	0	251-444	Gas Dynamics I	3	3	0
251-441	Aircraft Str. I	4	3	4	251-442	Aircraft Str. II	4	3	4
251-471	Prob. in As.E.	3	3	0	251-474	Boundary Layer	4	3	4
251-473	Viscous Flow	2	2	0	000-099	Intern. Assign.	.	.	.
000-099	Intern. Assign.	.	.	.			17	15	8
		19	17	7					

Senior Year (57 cr.)

		Sum. or Aut.			Winter			Spring		
*No.	Course Title	Cr.	Lec.	Lab.	Cr.	Lec.	Lab.	Cr.	Lec.	Lab.
	Human.-Soc. Elect.	3	3	0						
(15)-075-322,3	World Hist. Since 1900				3	3	0	3	3	0
030-273	Modern Physics	4	4	0						
251-445	Gas Dynamics II	4	3	3						
251-501,2,3	Thesis	2	0	6	2	0	8	2	0	8
251-541,2	Aeromechanics	3	3	0	3	3	0			
251-544	Control Theory	3	3	0						
251-546	Control Laboratory							1	0	3
251-572	Trajectory Dynamics							4	4	0
251-574	Propulsion Systems				4	3	3			
251-576	Rocket Propulsion							3	3	0
	Technical Elect				6	6	0	6	6	0
000-502	Intro. Profl. Prac. II	1	1	0						
000-099	Internship Assign.	.	.	.						
		20	17	9	18	15	11	19	16	11

*College Code prefix for all courses in this table is 20-, unless otherwise noted in parentheses.
†Choice of 075-107, 8 or 075-110, 1.
‡Choice of two Qtrs. of 001-201, 2, 3; or 001-221, 2, 3; or 001-231, 2, 3.

Chemical Engineering

The work of the chemical engineer appears in a wide variety of situations. He is responsible for the technical aspects of chemical manufacturing industries ranging from "heavy" chemicals such as sulfuric acid and lime to "fine" chemicals such as antibiotics and perfumes. He is found helping to solve problems ranging from the disposal of industrial wastes to the combustion of fuels for rockets and aerospace vehicles. His work also supports nonchemical industries from providing finishes and plastics used in automobile manufacture to processing fuels for, and radioactive products from, nuclear reactors. In short, wherever chemicals are made or used, or wherever natural materials (such as foods, petroleum, rubber, and clay) are processed, chemical engineering activity is to be found.

Chemical engineering is distinguished from all other branches of engineering to the extent that it is founded largely upon the science of chemistry in addition to physics. The training of the chemical engineer must therefore include a strong sequence of chemistry courses, in addition to mathematics, physics, and the engineering sciences. In his special field he must also study the fundamentals of those sciences requisite to the development, design, and operation of such processes, machinery, and plants as are used in the chemical industries. This intensive study of both engineering and science is the foundation upon which the student may build, after graduation, in fitting himself to direct research, improve processes or materials, develop and design plants, or direct operation of industrial plants involving chemical methods.

Because at the University of Cincinnati the students' academic training is supplemented by practical experience obtained by working in industry under the cooperative plan, the classroom and laboratory work are designed to provide a broad coverage of fundamental principles of wide applicability. Narrow specialization is not intended in the undergraduate work. These principles are to be found in the study of such subjects as material and energy balances, chemical thermodynamics, chemical reaction kinetics, heat and mass transfer, fluid mechanics, the structure and properties of matter, and process dynamics. The applications of these to process design are emphasized with especial reference to economic factors.

Curriculum. During the first year the curricula are identical for all the departments of engineering. In the second and third years are introduced the first of the professional courses in chemistry and metallurgy which distinguish chemical and metallurgical engineering from the other branches. In the fourth and fifth years the professional aspects of chemical engineering are developed upon the scientific foundation previously laid down.

Studies are accompanied by work in properly equipped laboratories. The instruction is supplemented by inspection visits by the classes to representative industries of which the Cincinnati area provides an excellent selection. A departmental library of 18,000 volumes of chemistry, chemical engineering, and metallurgical engineering books and periodicals is available in the building for study, general reference, or specialized research.

For the schedule of the freshman year in chemical engineering, see p. 17.

Chemical Engineering Curriculum

Sophomore Year (38 cr.)

Summer or Autumn					Winter or Spring				
*No.	Course Title	Cr.	Lec.	Lab.	*No.	Course Title	Cr.	Lec.	Lab.
025-224	Calc. & Anal.IV	5	5	0	025-278	Proba. & Statis.	4	4	0
030-202	Physics II	5	4	2½	030-203	Physics III	5	4	2½
031-113	Mechanics III	4	4	0	031-373	Nat.&Prop.Mater	4	4	0
272-273	Computer Progr.	1	0	3	(15)-035-242	Chem. Analysis I	3	3	0
254-241	Elem.Chem.Engr.	3	2	3	(15)-035-252	Chem. Anal. Lab.	3	0	11
000-099	Intern. Assign.	.	.	.	000-202	Intro.Profl.Prac.I	1	1	0
		18	15	8½	000-099	Intern. Assign.	.	.	.
							20	16	13½

Pre-junior Year (36 cr.)

(15)-075-†	History I	3	3	0	(15)-075-†	History II	3	3	0
025-276	Linear Algebra	3	3	0	025-272	Diff. Equations	3	3	0
031-381	Basic Thermo.	4	4	0	031-383	Basic Fluid Mech.	4	3	3
(15)-035-243	Chem. Analysis II	2	2	0	254-342	Energy Balances	3	2	4
(15)-035-253	Chem. Meas. Lab.	3	0	10	254-372	Chem. Thermo.	5	5	0
269-371	Intro. to Met.	3	3	0	000-099	Intern. Assign.	.	.	.
000-099	Intern. Assign.	.	.	.			18	16	7
		18	15	10					

Junior Year (38 cr.)

(15)-001-‡	Literature I	3	3	0	(15)-001-‡	Literature II	3	3	0
031-372	Basic Elec. Net.	4	3	3	031-375	Basic Strength	3	3	0
031-385	Basic Heat Trans.	3	3	0	254-373	Top. in P. Chem.	3	3	0
254-375	Exptl.Phys.Chem.	4	0	12	254-450	Org.Struc.&Proc.I	5	4	4
254-471	Equilib. Processes	5	5	0	254-472	Phys. Rate Proc.	4	4	0
000-099	Intern. Assign.	.	.	.	254-482	Ch. E. Lab. I	1	0	4
		19	14	15	000-099	Intern. Assign.	.	.	.
							19	17	8

Senior Year (56 cr.)

		Sum. or Aut.			Winter			Spring		
*No.	Course Title	Cr.	Lec.	Lab.	Cr.	Lec.	Lab.	Cr.	Lec.	Lab.
	Human.-Soc. Elect.	3	3	0	3	3	0	3	3	0
(15)-075-322,3	World Hist. Since 1900				3	3	0	3	3	0
254-451	Org. Struc. & Proc. II	5	4	4						
254-473	Chem. Rate Processes	4	4	0						
254-483	Ch.E. Lab. II	2	0	8						
254-491	Trans. Oper. Design	4	4	0						
030-273	Modern Physics				4	4	0			
254-541	Process Design & Econ.							3	3	0
254-542,3	Process Design Project, *or*									
254-551,2	Senior Research Project				2	0	8	2	0	8
254-571,2	Proc. Dynam. & Control				4	4	0	1	0	4
	Other Electives				3	3	0	6	6	0
000-502	Intro. Profl. Prac. II	1	1	0						
000-099	Internship Assign.	.	.	.						
		19	16	12	19	17	8	18	15	12

*College Code prefix for all courses in this table is 20-, unless otherwise noted in parentheses.
†Choice of 075-107, 8 or 075-110, 1.
‡Choice of two Qtrs. of 001-201,2,3; or 001-221,2,3; or 001-231,2,3

Civil Engineering

The curriculum in civil engineering and related cooperative work is designed to give a broad, fundamental education in preparation for diverse professional responsibilities.

The major responsibilities of a civil engineer are to conceive, to design, and to supervise the construction and operation of a wide variety of public and private works, many of great magnitude. The professional education of a civil engineer prepares him for a career of creative achievement and for leadership in civic and industrial development.

In addition to being responsible for the buildings, bridges, dams, tunnels, highways, airports, railways, water supply, and sewage-treatment plants of modern communities, the civil engineer is concerned also with the major structures of manufacturing and processing plants, as well as those of power generating stations.

Objective. The aim is to prepare the student for continued growth throughout his career; to develop his initiative, vision, imagination, and sense of responsibility for the contributions he can make to the benefit of mankind.

Curriculum. The curriculum is founded on the basic and engineering sciences and the humanities, studied by all engineering students. The required professional departmental courses include sequences in these areas of civil engineering: structural engineering, essential in all projects; sanitary engineering and hydrology; hydraulic engineering and waterways; transportation engineering, including traffic control and safety; topographic engineering, including mapping, measurements, and movement of earth materials; and the materials of engineering construction.

During the senior year, students elect sequences of courses and a senior project in one or more of these areas of their interest. These electives are listed with the course descriptions, with numbers between 600-700 in the last three digits. Well-equipped laboratories and design problems are used to create an attitude of accomplishment, merged with an understanding of technical problems and the creative problem-solving methods of professional engineers.

Environmental Health Engineering. Since Cincinnati is a world center for sanitary engineering research, the University of Cincinnati offers a unique opportunity for students majoring in this field. This major may afford related work with the Robert A. Taft Sanitary Engineering Center, the U. S. Public Health Service, the Ohio River Valley Water Sanitation Commission, the Kettering Laboratory and Institute of Environmental Health of the College of Medicine, and other similar organizations.

Master's and Doctoral Study. Electives and senior projects provide a natural transition and adequate preparation for postgraduate education. Graduate training is more and more necessary in the specialized fields of civil engineering. Graduate programs in civil engineering at the University of Cincinnati are described separately in the *Bulletin* of The Graduate School.

Cooperative Work. Practical experience in the field of civil and environmental health engineering is obtained with consulting engineers, construction companies, contractors, highway departments, railroads, structural steel fabricators, utilities, industrial plants, and engineering departments of city, county, state, and Federal government.

For the schedule of the freshman year in civil engineering, see page 17.

Civil Engineering Curriculum

Sophomore Year (39 cr.)

Summer or Autumn					Winter or Spring				
*No.	Course Title	Cr.	Lec.	Lab.	*No.	Course Title	Cr.	Lec.	Lab.
(15)-075-†	History I	3	3	0	(15)-075-†	History II	3	3	0
025-224	Calc. & Anal. IV	5	5	0	025-278	Proba. & Statis.	4	4	0
030-202	Physics II	5	4	2½	030-203	Physics III	5	4	2½
031-113	Mechanics III	4	4	0	031-375	Basic Strength	3	3	0
272-273	Computer Prog.	1	0	3	257-272	Surveying I	3	2	4
257-271	Civil Engr. I	2	1	3	000-202	Intro.Profl.Prac.I	1	1	0
000-099	Intern. Assign.	.	.	.	000-099	Intern. Assign.	.	.	.
		20	17	8½			19	17	6½

Pre-junior Year (36 cr.)

(15)-001-‡	Literature I	3	3	0	(15)-001-†	Literature II	3	3	0
025-272	Diff. Equations	3	3	0	031-381	Basic Thermo	4	4	0
030-273	Modern Physics	4	4	0	031-373	Nat.&Prop.Mater.	4	4	0
257-373	Surveying II	5	3	8		Math. or			
257-391	Applied Strength	3	2	3		En. Sc. Elect.	3	3	0
000-099	Intern. Assign.	.	.	.	257-380	Struct. Engr. I	4	3	3
		18	15	11	000-099	Intern. Assign.	.	.	.
							18	17	3

Junior Year (38 cr.)

(22)-080-451	Economics I	3	3	0	(22)-080-452	Economics II	3	3	0
031-383	Bas. Fluid Mech.	4	3	3	257-492	Hydraulic Engr. I	4	3	3
257-441	Sanitary Engr. I	4	3	3	257-442	Sanitary Engr. II	4	3	3
257-475	Construct. Mater.	4	2	6	257-476	Soil Mechanics	4	3	3
257-481	Struct. Engr. II	4	3	3	257-482	Struct. Engr. III	4	3	3
000-099	Intern. Assign.	.	.	.	000-099	Intern. Assign.	.	.	.
		19	14	15			19	15	12

Senior Year (53 cr.)

		Sum. or Aut.			Winter			Spring		
*No.	Course Title	Cr.	Lec.	Lab.	Cr.	Lec.	Lab.	Cr.	Lec.	Lab.
	Human.-Soc. Elect.	3	3	0						
040-272	Earth Materials				3	2	3			
040-472	Engineering Geology							3	2	3
(15)-075-322,3	World Hist. Since 1900				3	3	0	3	3	0
031-372	Basic Elec. Net	4	3	3						
031-385	Basic Heat Transfer	3	3	0						
257-551,2	Highway Engr. I, II	4	3	3	3	3	0			
§257-583	Structural Engr. IV	4	3	3						
§257-501,2,3	Senior Project	1	0	4	3	0	12	3	1	8
§	Electives	.			6	6	0	6	6	0
000-502	Intro. Profl. Prac. II	1	1	0						
000-099	Internship Assign.	.	.	.						
		20	16	13	18	14	15	15	12	11

*College Code prefix for all courses in this table is 20-, unless otherwise noted in parentheses.
†Choice of 075-107, 8 or 075-110, 1.
‡Choice of two Qtrs. of 001-201,2,3; or 001-221,2,3; or 001-231,2,3
§Sanitary Engineering majors will omit courses (§) and substitute:

		Sum. or Aut.			Winter			Spring		
*No.	Course Title	Cr.	Lec.	Lab.	Cr.	Lec.	Lab.	Cr.	Lec.	Lab.
257-641,2,3	Envir. Science & Engr. Seminar	1	0	2	1	0	2	1	0	2
257-645	Envir. Science & Engr. I	2	2	0						
257-646	Envir. Science & Engr. II				3	2	3			
257-647	Envir. Science & Engr. III				3	2	3			
257-648	Envir. Science & Engr. IV							3	1	4
257-693,4	Hydraulic Engineering II, III				3	2	3	3	2	3
254-591	Indus. Microbiology							3	3	0

Electrical Engineering

The objective of the electrical engineering curriculum is to prepare graduates for service in the broad scope of professional engineering work. Accordingly the courses provide intensive training in the fundamental principles of electrical engineering science illustrated by applications. Moreover, the building of professional attitudes and competence in this area is accompanied by a strong discipline in mathematics and by basic training in other distinct engineering sciences.

Two important educational concepts are emphasized. One is depiction of the current status of the art and science of engineering; the other is preparation for future growth of the graduate. The curriculum is planned to furnish a broad foundation for subsequent activity in the various branches of the profession or for continuation of study in graduate school. Students who have superior academic ability may elect to take additional advanced mathematics course work instead of the thesis program listed in the senior year of the curriculum.

Introduction to the principles of electrical engineering begins with the third year and the professional training develops through the upper three years with a continuing breadth based upon fundamental theory. During the senior year, technical electives are offered to furnish opportunity for the student to follow his special interests and abilities.

Experimental work in the laboratories is coordinated with instruction in theory. Digital and analog computers are used to supplement theoretical investigation, laboratory experimentation, and engineering design.

Each student taking the thesis program is required to prepare and present an acceptable dissertation based upon his independent theoretical and experimental investigation. The thesis program is intended to develop the initiative of the student and to offer opportunity for the use of theoretical knowledge and engineering judgment. A formal, comprehensive, written report of each investigation is bound and deposited in the University Library.

The practical experience obtained by the student during the cooperative experience periods is of wide variety. This experience, interleaved with the academic work in electrical engineering, enables the student to correlate principles and practice, as well as to become acquainted with the problems of both labor and management.

For the schedule of the freshman year in electrical engineering, see p. 17.

Technical Electives in Electrical Engineering

Summer and Autumn

260-555 Communications Circuits
260-674 Analog Computation

Winter

260-673 Digital Computers
260-682 UHF Techniques
260-686 Feedback Control System Design
260-560 Electronic Circuit Design
260-572 Design Engineering Laboratory
260-576 Analog Computation Laboratory

Spring

260-678 Communication Theory
260-680 Energy Conversion
260-696 Nonlinear Control Systems
025- Approved Mathematics Course
260-574 Digital Circuits Laboratory
260-578 UHF Laboratory
260-586 Feedback Control Laboratory

Electrical Engineering Curriculum

Sophomore Year (39 cr.)

Summer or Autumn					Winter or Spring				
*No.	Course Title	Cr.	Lec.	Lab.	*No.	Course Title	Cr.	Lec.	Lab.
(15)-075-†	History I	3	3	0	(15)-075-†	History II	3	3	0
025-224	Calc. & Anal. IV	5	5	0	025-272	Diff. Equations	3	3	0
030-202	Physics II	5	4	2½	025-276	Linear Algebra	3	3	0
031-113	Mechanics III	4	4	0	030-203	Physics III	5	4	2½
272-271	Graphics IV	3	1	6	031-375	Basic Strength	3	3	0
000-099	Intern. Assign.	.	.	.	272-273	Computer Progr.	1	0	3
		20	17	8½	000-202	Intro.Profl.Prac.I	1	1	0
					000-099	Intern. Assign.	.	.	.
							19	17	5½

Pre-junior Year (38 cr.)

(15)-001-‡	Literature I	3	3	0	(15)-001-†	Literature II	3	3	0
025-371	Advanced Math.	3	3	0	260-374	Electromag. Flds.	3	3	0
025-278	Proba. & Statis.	4	4	0	260-452	Electronics I	5	4	2
031-372	Basic Elec. Net.	4	3	3	260-344	Network Anal. I	5	5	0
031-373	Nat.&Prop.Mater.	4	4	0	§260-382	Meas. Lab.	2	0	6
§260-382	Meas. Lab.	2	0	6	§260-384	Analog Lab.			
§260-384	Analog Lab.				000-099	Intern. Assign.	.	.	.
000-099	Intern. Assign.	.	.	.			18	15	8
		20	17	9					

Junior Year (36 cr.)

	Human.-Soc.Elect.	3	3	0		Human.-Soc.Elect.	3	3	0
260-345	Network Anal. II	5	5	0	260-671	Transmsn. Lines.	3	3	0
260-441	Electrical Mach. I	4	3	2	260-442	Elect. Mach. II	4	4	0
260-453	Electronics II	4	4	0	260-454	Electronics III	5	5	0
260-457	Electronics Lab. I	2	0	6	260-458	Electronics Lab. II	1	0	3
000-099	Intern. Assign.	.	.	.	260-444	Machinery Lab.	2	0	6
		18	15	8	000-099	Intern. Assign.	.	.	.
							18	15	9

Senior Year (56 cr.)

		Sum. or Aut.			Winter			Spring		
*No.	Course Title	Cr.	Lec.	Lab.	Cr.	Lec.	Lab.	Cr.	Lec.	Lab.
	Human.-Soc. Elect.	3	3	0						
(15)-075-322,3	World Hist. Since 1900				3	3	0	3	3	0
030-273	Modern Physics							4	4	0
031-381	Basic Thermo·	4	4	0						
031-383	Basic Fluid Mech.				4	3	3			
031-385	Basic Heat Transfer							3	3	0
260-571	Design Engineering	3	3	0						
260-486	Feedback Control	4	4	0						
260-672	Field Theory				4	4	0			
260-582	Engineering Analysis							3	3	0
260-§	Technical Elect.	3	3	0	3	3	0	3	3	0
260-°	Technical Elect.				2	0	6	2	0	6
¶260-501,2	Thesis I, II	2	0	6	2	0	6			
000-502	Intro. Profl. Prac. II	1	1	0						
000-099	Internship Assign.	.	.	.						
		20	18	6	18	13	15	18	16	6

*College Code prefix for all courses in this table is 20-, unless otherwise noted in parentheses.
†Choice of 075-107, 8 or 075-110, 1.
‡Choice of two Qtrs. of 001-201,2,3; or 001-221,2,3; or 001-231,2,3
§Half of the pre-juniors take 260-382 in Summer or Autumn; the other half take 260-384. In Winter or Spring, each student will take that course not taken previously.
°Choice of electives from the list on the facing page.
¶Students having a four-year cumulative quality point average of 2.75 or higher may elect to take either thesis or an advanced mathematics course.

Mechanical Engineering

A mechanical engineer can today be found working on systems for direct conversion of heat to electricity; developing an economical method for producing drinking water in an energy-poor country; analyzing the control characteristics of a space vehicle; or designing a prosthetic device or an artificial heart to serve the physically handicapped. In the past, mechanical engineering has most often been associated with engines, machinery, and the production of power. While these fields still constitute a large portion of mechanical engineering activity, the nature of engines, machinery, and power production is changing radically. Hence, the work of the mechanical engineer has broadened to an enormous degree.

The field of mechanical engineering is today most strongly characterized by breadth in education and variety in professional practice. The curriculum in mechanical engineering is marked by the fact that each of the basic engineering science courses is followed by further required work in that area. The foundation in engineering science courses is utilized in the design process, which is the distinguishing aspect of engineering education, and in which the student gains practice throughout the professional course work.

An extensive program of elective subjects in the senior year makes it possible for the student to prepare himself for any one of several distinct professional objectives. He may be interested in preparing for graduate study in mechanical engineering, engineering science, applied mechanics, or other disciplines; or he may be interested in a more general preparation for immediate professional work. Through a judicious selection of electives, the student may develop, on one hand, a program which conforms essentially to an engineering science curriculum or, on the other hand, a program which emphasizes a certain technical specialty.

The elective program for each student is developed by the student, in consultation with his departmental adviser, during the junior year. Elective subjects may be chosen from any department in the University in such a way as to fulfill a definite professional objective, to form an integrated program of study acceptable for the degree of Bachelor of Science in Mechanical Engineering, and to satisfy special needs and interests on the part of the student. Elective programs are subject to the approval of the departmental faculty.

Both digital and analog computer techniques are introduced in the undergraduate program, and computer methods are emphasized throughout the professional subject matter.

Laboratory facilities are used to the greatest possible extent to give the student insight as to the physical implications of fundamental principles, as well as to develop the capability of the student for experimental work. Excellent instrumentation and computation facilities are available, in addition to special equipment for study in specific subject areas. A well-equipped shop supports these facilities, and provides the means for building and developing research apparatus required by students working on individual projects.

For the schedule of the freshman year in mechanical engineering, see page 17.

Mechanical Engineering Curriculum

Sophomore Year (38 cr.)

Summer or Autumn

*No.	Course Title	Cr.	Lec.	Lab.
(15)-075-†	History I	3	3	0
030-202	Physics II	5	4	2½
025-224	Calc. & Anal. IV	5	5	0
031-113	Mechanics III	4	4	0
272-273	Computer Progr.	1	0	3
000-099	Intern. Assign.	.	.	.
		18	16	5½

Winter or Spring

*No.	Course Title	Cr.	Lec.	Lab.
(15)-075-†	History II	3	3	0
025-272	Diff. Equations	3	3	0
030-203	Physics III	5	4	2½
031-373	Nat.&Prop.Mater.	4	4	0
263-360	Theory of Mach. I	4	3	3
000-202	Intro.Profl.Prac.I	1	1	0
000-099	Intern. Assign.	.	.	.
		20	18	5½

Pre-junior Year (35 cr.)

(15)-001-‡	Literature I	3	3	0
025-278	Proba. & Statis.	4	4	0
031-375	Basic Strength	3	3	0
269-373	Engr. Metallurgy	3	3	0
269-375	Engr. Met. Lab.	1	0	3
263-361	Theory Mach. II	4	3	3
000-099	Intern. Assign.	.	.	.
		18	16	6

(15)-001-‡	Literature II	3	3	0
025-371	Advanced Math.	3	3	0
257-391	Applied Strength	3	2	3
031-372	Basic Elec. Net.	4	3	3
031-381	Basic Thermo.	4	4	0
000-099	Intern. Assign.	.	.	.
		17	15	6

Junior Year (37 cr.)

(22)-080-451	Economics I	3	3	0
031-383	Bas. Fluid Mech.	4	3	3
263-450	Engr. Thermo. I	4	4	0
263-481	Des. Mech. Elem.	4	4	0
263-486	Anal. Meth. Engr.	4	3	3
000-099	Intern. Assign.	.	.	.
		19	17	6

(22)-080-452	Economics II	3	3	0
030-273	Modern Physics	4	4	0
263-451	Engr. Fl. Mech. I	4	4	0
031-385	Bas. Heat Trans.	3	3	0
263-485	Mech. Vibrations	4	3	3
000-099	Intern. Assign.	.	.	.
		18	17	3

Senior Year (55 cr.)

		Sum. or Aut.			Winter			Spring		
*No.	Course Title	Cr.	Lec.	Lab.	Cr.	Lec.	Lab.	Cr.	Lec.	Lab.
	Human.-Soc. Elect.	3	3	0						
	Mathematics Elective	3	3	0						
(15)-075-322,3	World Hist. Since 1900				3	3	0	3	3	0
263-551,2	Heat, Mass & Momentum Transfer I, II	4	3	3	°4	3	3	(4	3	3)
263-571	Meas. & Instr. I	4	3	3						
263-585	Control Systems I	4	3	3						
263-587	Engineering Design				°(4	2	4)	4	2	4
§	Electives				11	¶	¶	11	¶	¶
000-502	Intro. Profl. Prac. II	1	1	0						
000-099	Internship Assign.	.	.	.						
		19	16	9	18	¶	¶	18	¶	¶

*College Code prefix for all courses in this table is 20-, unless otherwise noted in parentheses.
†Choice of 075-107, 8 or 075-110, 1.
‡Choice of two Qtrs. of 001-201,2,3; or 001-221,2,3; or 001-231,2,3
§See explanation of elective program under "Mechanical Engineering" on previous page. Credits may vary with courses taken.
°These courses are taken alternately in Winter and Spring Quarters by Section I and Section II.
¶Depends upon electives selected.

Metallurgical Engineering

The curriculum in metallurgical engineering covers the basic engineering sciences, and the fundamentals of physics, chemistry, and mathematics as applied to the winning, refining, shaping, modification, and application of metals. This intensive study of both engineering and science is the foundation upon which the student may build, after graduation, to fit himself to direct research, improve and control processes, develop plants, provide product promotion, or manage the various operations in the metallurgical industry.

Metallurgy accounts for about one-third of the total industrial activity of the United States and, of this amount, about two-thirds is devoted to the application of metals. Accordingly at the University of Cincinnati greater emphasis is placed on the principles involved in the casting, forming, and fabrication of metals, their heat-treatment, corrosion resistance, and ability to withstand special service conditions. However, the importance of applying advanced scientific and engineering principles to the economic production of special as well as the common metals is not overlooked.

Metallurgy has expanded rapidly in recent years. Special metals such as uranium, zirconium, hafnium, yttrium, beryllium, and gadolinium that were almost curiosities a short time ago are now important. On the one hand, very complex mixtures of several metals are required to provide the properties to withstand the high temperatures of modern jet and rocket engines. At the other extreme, pure metals with total impurities measured and controlled in fractions of parts per million are required not only for research but as the basic building blocks of special semiconductors, direct energy conversion devices, and superconductive or nuclear systems. However, it is a fact that the ability to provide improved devices and systems is still restricted by the lack of materials with precisely the properties required. All this is the challenge of metallurgical engineering.

Curriculum. During the first three years, the courses in the metallurgical engineering curriculum are the same as those for chemical engineering. In the second and third years are introduced the first of the professional courses of chemistry and metallurgy which distinguish these two branches of engineering from all others.

During the last two years, the metallurgical engineering curriculum becomes unique. Courses in metallurgical structures, physical metallurgy, metallurgical kinetics, metallurgical thermodynamics continue to develop in greater depth the application of the basic sciences to the understanding of the behavior of metals. Similarly, courses in chemical metallurgy, electrometallurgy, and metallurgical processes emphasize how these principles are applied in the production of metals and alloys in useful forms.

Studies and lectures are supported by work in properly equipped laboratories. Also, highly specialized metallurgical testing and processing equipment is available for observation and actual use, by the more advanced students, in the research laboratories and plants of various companies in the Cincinnati area. As additional support, a departmental library of more than 18,000 volumes of chemistry, chemical engineering, and metallurgical engineering books and periodicals is available in the building for study, general reference, or specialized research.

For the schedule of the freshman year in metallurgical engineering, see page 17.

Metallurgical Engineering Curriculum

Sophomore Year (38 cr.)

Summer or Autumn					Winter or Spring				
*No.	Course Title	Cr.	Lec.	Lab.	*No.	Course Title	Cr.	Lec.	Lab.
025-224	Calc. & Anal. IV	5	5	0	025-278	Proba. & Statis..	4	4	0
030-202	Physics II	5	4	2½	030-203	Physics III	5	4	2½
031-113	Mechanics III ..	4	4	0	031-373	Nat.&Prop.Mater.	4	4	0
272-273	Computer Progr.	1	0	3	(15)-035-242	Chem. Analysis I	3	3	0
254-241	Elem.Chem.Engr.	3	2	3	(15)-035-252	Chem.Anal.Lab.	3	0	11
000-099	Intern. Assign. . .	.	.	.	000-202	Intro.Profl.Prac.I	1	1	0
		18	15	8½	000-099	Intern. Assign. . .	.	.	.
							20	16	13½

Pre-junior Year (36 cr.)

(15)-075-†	History I	3	3	0	(15)-075-†	History II	3	3	0
025-276	Linear Algebra .	3	3	0	025-272	Diff. Equations .	3	3	0
031-381	Basic Thermo. .	4	4	0	031-383	Basic Fluid Mech.	4	3	3
(15)-035-243	Chem. Anal. II.	2	2	0	254-342	Energy Balances	3	2	4
(15)-035-253	Chem.Meas.Lab.	3	0	10	254-372	Chem. Thermo..	5	5	0
269-371	Intro. to Met. ..	3	3	0	000-099	Intern. Assign. . .	.	.	.
000-099	Intern. Assign. . .	.	.	.			18	16	7
		18	15	10					

Junior Year (38 cr.)

(15)-001-‡	Literature I	3	3	0	(15)-001-‡	Literature II ...	3	3	0
031-372	Basic Elec. Net..	4	3	3	257-391	Applied Strength	3	2	3
031-375	Basic Strength ..	3	3	0	269-476	Physical Met. ..	3	3	0
254-375	Exptl.Phys.Chem.	4	0	12	269-480	Met. Tech. Lab..	3	0	11
269-477	Metal Structures	3	3	0	269-486	Met. Kinetics ..	3	3	0
269-485	Met. Thermo. ..	3	3	0		Other Elective ..	3	3	0
000-099	Intern. Assign. . .	.	.	.	000-099	Intern. Assign. . .	.	.	.
		20	15	15			18	14	14

Senior Year (53-56 cr.)

		Sum. or Aut.			Winter			Spring		
*No.	Course Title	Cr.	Lec.	Lab.	Cr.	Lec.	Lab.	Cr.	Lec.	Lab.
	Human.-Soc. Elect. . . .	3	3	0	3	3	0	3	3	0
(15)-075-322,3	World Hist. Since 1900				3	3	0	3	3	0
030-273	Modern Physics							4	4	0
031-385	Bas. Heat Trans.	3	3	0						
269-575	Phys. Met. Lab.	2	0	6						
269-577	Electrometallurgy	3	3	0						
269-579	Electromet. Lab.	2	0	6						
269-581	Extractive Met.	3	3	0						
269-583	Metal Processing	3	3	0						
269-584	Metal Proc. Lab.				2	0	6			
269-586	Prop. of Solids				3	3	0			
269-541,2	Sr. Research Proj. I, II				3	0	9	3	0	12
	Other Electives				3	3	0	3–6	3–6	0–4
000-502	Intro. Profl. Prac. II ..	1	1	0						
000-099	Internship Assign. . . .	.	.	.						
		20	16	12	17	12	15	16–19	13–16	12–16

*College Code prefix for all courses in this table is 20-, unless otherwise noted in parentheses.
†Choice of 075-107, 8 or 075-110, 1.
‡Choice of two Qtrs. of 001-201, 2, 3; or 001-221, 2, 3; or 001-231, 2, 3.

COURSES OF INSTRUCTION

COURSE DESCRIPTIONS

All courses are assigned a three-part identification consisting of an eight-digit code number. The first two digits designate the school or college basically responsible for the course, the next three digits indicate the general area of study, and the last three digits are the specific course designation.

The following college designations may be found in sections of this catalog:

14—The Graduate School
15—McMicken College of Arts and Sciences
20—College of Engineering
22—College of Business Administration
23—College of Design, Architecture, and Art

Number designations of areas of study applicable to various curricula of the College of Engineering include:

Area of Study	Code Number
Coordination	000
English	001
Mathematics and Mechanics	025, 275
Physics	030
Engineering Science	031
Chemistry	035
Geology	040
History	075
Economics	080
Military Science (ROTC)	111
Air Science (AFROTC)	112
Engineering Profession	250
Aerospace Engineering	251
Chemical Engineering	254
Civil Engineering	257
Electrical Engineering	260
Mechanical Engineering	263
Metallurgical Engineering	269
Engineering Graphics	272

The course descriptions which follow are listed in numerical order according to areas of study.

In these course descriptions the following abbreviations and notations have been used: Sum.—Summer; Aut.—Autumn; Win.—Winter; Spr.—Spring.

Sum. & Aut.—Courses given each Summer for Section II cooperative students and each Autumn for Section I.

Win. & Spr.—Courses given each Winter for Section II cooperative students and each Spring for Section I.

Each Qtr. —Courses available in all Quarters.

Coordination

Professor Hoblitzell; Associate Professors Flint, Peters, Williamson; Assistant Professor Bunce.

20-000-202. Introduction to Professional Practice I. Objective analysis of the values of internship assignments; concepts of industrial organization; analysis of actual industrial situations. Win. & Spr.: 1-1-0.

20-000-502. Introduction to Professional Practice II. Preplacement career planning. Transference of career interest into a plan of action for full-time employment. Sum. & Aut.: 1-1-0.

English

Professor Robinson, Head of Department; Professors Barroll, Clark, McCall, Staples; Associate Professors Boyce, Chard, Golding, Stewart, Wright; Assistant Professors Armstrong, Clow, Davis, Farwell, Fern, Fillager, Gebhart, Green, Haas, Hale, Hall, Hamrick, Irvine, LePage, Mosher, Stevens, Ware, Wiebe; Instructors Allen, Andrews, Avinger, Barbour, Burnett, Butterfield, Camp, Dean, DeKraker, deMaagd, Dodge, Dummer, Eremin, Hendley, Herrin, Hinchey, Kevorkian, Lauria, Nelson, Perry, Quammen, Reynolds, Schulman, Swan, Thompson, Totten, Wolff.

Curriculum Requirements: All students in the College of Engineering are required to take Engl. 101-2-3, and two Quarters from *either* Engl. 201-2-3. 221-2-3, or Engl. 231-2-3. Unless otherwise specified, courses may be entered in the Winter and Spring Quarters *only* with the instructor's permission.

15-001-101,102,103. Freshman English. Composition and comprehension in reading; appreciation of literature. No student may register for the Winter or Spring Quarter until he has credit for the preceding Quarter. Staff. 3-3-0.

Sophomore English Courses

15-001-201,202,203. The American Tradition in Literature. A study of prominent works of American literature, representing various important literary and intellectual traditions. Aut. Qtr.: Intellectual Backgrounds; Fiction and Poetry of the American Renaissance. Win. Qtr.: Modern Fiction. Spr. Qtr.: Modern Poetry and Drama. Prereq.: 15-001-101,2,3. No student may register for English 202 or 203 until he has credit for 201. Staff. 3-3-0.

15-001-221,222,223. World Literature. Translations of narrative poems, novels and plays from all literatures other than English studied for content and structure in relation to various literary modes. Aut. Qtr.: Introduction to World Literature. Win. Qtr.: Tragedy. Spr. Qtr.: Comedy and Satire. Prereq.: 15-001-101,2,3. No student may register for English 222 or 223 until he has credit for 221. Staff. 3-3-0.

15-001-231,232,233. Survey of English Literature. A chronological approach to English literature from *Beowulf* to the twentieth century. Prereq.: 15-001-101,2,3. No student may register for English 232 or 233 until he has credit for the preceding Quarter. Staff. 3-3-0.

Electives in English

15-001-271. Advanced Composition. This course emphasizes the fundamentals of standard usage and sound style. Staff. Aut. Qtr.: 3-3-0.

15-001-241,242. The English Language. Structural and analytical study of modern American English. Survey-history of the English language. Staff. Win. & Spr. 3-3-0.

15-001-301,302,303. Development of the Drama. The modes and patterns of dramatic literature from ancient Greece to the present. Mr. Clark. 3-3-0.

15-002-311,312,313. Shakespeare. Mr. Barroll. 3-3-0.

15-001-211,212,213. Prose Writing. Examination and discussion in class of each student's work, with emphasis upon individual experience and temperament as creative guides. Assigned readings for background and critical analysis. Mr. Wiebe. 3-3-0.

Mathematics and Mechanics

Professor Lipsich, Head of Department; Professors Baker, Doty, Dunholter, Lubin, Restemeyer, White; Associate Professors Ferguson, Fopma, Huston; Assistant Professors Cook, Franklin, Harlow, Pinzka, Raymond, Tsuei, Wang; Instructors: Eckart, Lockhart, Myers, Singer, Strenk.

15-025-231. Introd ction to Operations Research I. Mathematical background for Operations Research, decision and value theory, with applications. Prereq.: 20-025-224. Win.: 3-3-0.

15-025-232. Introduction to Operations Research II. Systems and models, simulation and gaming, with applications. Prereq.: 15-025-231. Spr. 3-3-0.

15-025-561. Vector Analysis I. Vector algebra in index notation; rectangular and oblique Cartesian coordinate systems; affine transformation group and subgroups; tensors; algebraic invariants of second rank tensors. Win.: 3-3-0.

15-025-562. Vector Analysis II. Orthogonal curvilinear coordinate systems; tensor components and physical components; differential and integral invariants; applications in differential geometry and fluid dynamics. Spr.: 3-3-0.

20-025-170. Mathematical Analysis. Topics in Algebra and Trigonometry essential for students in engineering, science and management. Algebraic and trigonometric functions, determinants and matrices, complex numbers. Aut.: 3-3-0.

20-025-221. Calculus and Analytic Geometry I. Introduction to analytic geometry, functions, limits, derivatives, elementary applications. Each Qtr.: 4-4-0.

20-025-222. Calculus and Analytic Geometry II. Integrals, integration techniques, transcendental functions. Prereq. 20-025-221. Each Qtr.: 5-5-0.

20-025-223. Calculus and Analytic Geometry III. Calculus applications, polar coordinates, vectors, infinite series. Prereq.: 20-025-222. Each Qtr.: 5-5-0.

20-025-224. Calculus and Analytic Geometry IV. Three-dimensional analytic geometry, partial differentiation, multiple integration. Prereq.: 20-025-223. Each Qtr.: 5-5-0.

20-025-272. Differential Equations. Introduction to ordinary differential equations emphasizing linear types with constant coefficients, homogeneous and nonhomogeneous equations, linear systems, with applications. Prereq.: 20-025-224. Each Qtr.: 3-3-0.

20-025-276. Linear Algebra. Basic properties of n-dimensional vector spaces, emphasizing the geometric interpretation of vectors and matrices, with applications. Each Qtr.: 3-3-0.

20-025-278. Probability and Statistics. Probability theory for discrete and continuous distributions, sampling and statistics, tests of significance, estimation and confidence intervals. Prereq.: 20-025-224. Each Qtr.: 4-4-0.

20-025-371. Advanced Mathematics. Selected topics from the differential and integral calculus of vector fields, linear partial differential equations, initial and boundary value problems. Prereq.: 20-025-272. Each Qtr.: 3-3-0.

20-025-375. Numerical Analysis. Finite differences, interpolation, iteration, numerical solutions of differential equations and systems. Prereq.: 20-025-272. Each Qtr.: 3-3-0.

20-025-471. Advanced Mathematics II. Analytic and geometric methods of complex analysis, integral theorems and expansions, conformal mapping with applications to plane fields and flows. Prereq.: 20-025-224. Win. & Spr.: 3-3-0.

20-025-472. Differential Equations II. Series solutions of ordinary linear differential equations, asympotic solutions, partial differential equations, Fourier Series. Prereq.: 20-025-272. Win. & Spr.: 3-3-0.

20-025-474. Nonlinear Analysis. Phase-plane, describing-function and Lyapunov techniques for the solution and stability consideration of nonlinear systems. Prereq.: 20-025-272. Spr.: 3-3-0.

20-025-475. Integral Transforms. An introduction to operator methods and generalized functions using Laplace and Fourier integrals with applications to linear systems analysis. Prereq.: 20-025-272. Spr.: 3-3-0.

20-025-476. Linear Programming. Mathematical background in matrices, vector spaces and sets; the simplex method and duality theory; application to transportation problems, network flows, game theory and industrial problems. Win.: 3-3-0.

20-025-477. Decision Theory. Statistical decision problems, decisions over time, application to conventional statistical methods as inference, correlation and regression, and analysis of variance. Prereq.: 20-025-278. Win.: 3-3-0.

20-025-478. Statistical Quality Control. Application of statistical methods to quality and industrial problems. Control charts, acceptance sampling by variables and attributes, regression and correlation methods, tests of significance. Prereq.: 20-025-278. Aut. & Win.: 3-3-0.

20-025-479. Design and Analysis of Experiments. Design of industrial experiments with techniques for analyzing experimental data. Randomized blocks, full and fractional factorial experiments, confounding in designs, optimization techniques, evolutionary operation. Prereq.: 20-025-278. Spr.: 3-3-0.

20-025-541. Complex Variables and Applications I. Analytic and harmonic functions, elementary mapping and conformality, applications. Prereq.: 20-025-371. Sum. & Aut.: 3-3-0.

20-025-542. Complex Variables and Applications II. Integrals, the Cauchy theorems, Taylor and Laurent series, residue theorem, applications. Prereq.: 20-025-541. Win.: 3-3-0.

20-275-481. Advanced Strength of Materials. Rotating discs, torsion of noncircular prisms, membrane stresses in thin shells of revolution, beams on elastic foundations, buckling; with emphasis on practical problems of stress analysis. Prereq.: 20-025-272; 20-031-375. Win.: 3-3-0.

20-275-482. Analytic Mechanics. The concepts and terminology of classical mechanics, including inertial and rotating reference frames, moment of inertia tensors, momentum principles, variational principles and Lagrange's equations. Prereq.: 20-025-272; 20-031-104. Win.: 3-3-0.

20-275-483. Mechanics of Solids and Fluids. Introduction to mechanics of a continuous medium. Cartesian tensors, field description of quantities associated with the material medium, constitutive equations for the classical ideal materials. Prereq.: 20-025-272; 20-031-104. Spr. 3-3-0.

20-275-484. Introduction to Rheology. The macroscopic behavior of real material; with emphasis on critical experimental results, the concepts used to describe and explain the behavior of real materials, and simple mathematical methods and models. Prereq.: 20-025-272; 20-031-383. Spr.: 3-3-0.

20-275-581. Advanced Fluid Mechanics. Conservation equations of mass, momentum, and energy; vorticity; irrotational flows; compressible flows; method of characteristics; Navier-Stokes equation. Prereq.: 20-031-383. Win.: 3-3-0.

20-275-582. Theory of Vibrations. Free and forced vibrations of discrete and continuous systems; strings, bars, plates, normal modes. Prereq.: 20-025-272. Spr.: 3-3-0.

Physics

Professor McCarthy and Staff.

20-030-202. General Physics II. A survey of several fundamental topics in physics with particular emphasis on heat and waves. Three lectures, a lecture-recitation section and a laboratory section each week. Prereq.: 20-025-223; 20-031-112. Staff. Sum. & Aut.: 5-4-2½.

20-030-203. General Physics III. A survey of several fundamental topics in physics with particular emphasis on optics and electricity and magnetism. Three lectures, a lecture-recitation section, and a laboratory section each week. Prereq.: 20-030-202. Staff. Win. & Spr.: 5-4-2½.

20-030-273. Introduction to Modern Physics. A survey of various topics in modern physics, including relativity, atomic and nuclear structure, and the properties of elementary particles. Prereq.: 20-030-203. Staff. Each Qtr.: 4-4-0.

Engineering Science

The engineering science program is a core program required in each of the professional engineering curricula. At least one course, basic and common to all departments, is required in each of the following areas: mechanics (statics and dynamics), materials engineering, electrical circuits, mechanics of solids, thermodynamics, mechanics of fluids, and heat transfer. Each course is assigned to a particular professional department for administrative purposes, as indicated in the course description. However, the courses are planned, developed, and taught on an interdepartmental basis.

Additional work in the engineering sciences is offered by the professional departments, as shown under departmental course listings.

20-031-111. Mechanics I. Basic concepts including vector operations, resultants of force systems, free body diagrams. Structures, friction, internal reactions of slender members. Aut. & Win.: 4-4-0.

20-031-112. Mechanics II. Kinematics of particles; force, mass and acceleration; work and energy; impulse and momentum. Win. & Spr.: 4-4-0.

20-031-113. Mechanics III. Kinematics of rigid bodies; translation, rotation, plane motion, work and energy, impulse and momentum. Spr., Sum. & Aut.: 4-4-0.

20-031-372. Basic Electric Networks. Transients and steady state network analysis, equivalent networks, resonance, basic theorems. Department of Electrical Engineering. Prereq.: 20-025-272; 20-030-203. Each Qtr.: 4-3-3.

20-031-373. Nature and Properties of Materials. The structure of matter and the manner in which this determines the mechanical, electrical, thermal, and chemical properties of materials. Department of Metallurgical Engineering. Prereq.: 20-030-202; 15-035-123, 133. Coreq.: 20-030-203. Each Qtr.: 4-4-0.

20-031-374. Electronics. Fundamentals of vacuum tube and semiconductor electronics with stress on applications. Voltage amplifiers, oscillators, AM, FM, control circuits. Department of Electrical Engineering. Prereq.: 20-031-372. Each Qtr.: 3-3-0.

20-031-375. Basic Strength of Materials. Stress-strain curves and properties of materials. Strain energy and work; direct stress; thermal stress; shear; torsion; flexure; deflections of beams; columns; combined stresses. Department of Civil Engineering. Prereq.: 20-025-224; 20-031-113. Each Qtr.: 3-3-0.

20-031-381. Basic Thermodynamics. Fundamental laws of classical thermodynamics; thermodynamic properties of matter; method of thermodynamic analysis in engineering. Department of Mechanical Engineering. Prereq.: 20-025-224; 20-030-202. Each Qtr.: 4-4-0.

20-031-383. Basic Fluid Mechanics. Physical nature of fluids, statics, dynamics, similarity parameters, viscous flow, fluid measurements. Laboratory exercises and demonstrations. Department of Aerospace Engineering. Prereq.: 20-031-381. Coreq.: 20-025-272. Each Qtr.: 4-3-3.

20-031-385. Basic Heat Transfer. Fundamental considerations in heat transfer emphasizing conduction and radiation with an introduction to convection. Department of Chemical Engineering. Prereq.: 20-030-203; 20-031-383. Each Qtr.: 3-3-0.

Chemistry

Associate Professor T. W. Gilbert; Assistant Professors Thayer, Worley.

15-035-121. General Chemistry I. Fundamental concepts: Electron configurations, types of bonding, and the periodic table; solid, liquid, gaseous states; quantitative relationships. Messrs. Thayer, Worley. Aut. & Win.: 3-3-0.

15-035-122. General Chemistry II. Properties of solutions, including electrolytes; chemical equilibrium. Some important families of elements. Prereq.: 15-035-121. Messrs. Thayer, Worley. Win. & Spr.: 3-3-0.

15-035-123. General Chemistry III. Important families of elements; electrochemistry; organic chemistry. Prereq.: 15-035-122. Messrs. Thayer, Worley. Spr. & Sum.: 3-3-0.

15-035-131. General Chemistry Laboratory I. Laboratory experiments and demonstrations supplementary to 15-035-121. Coreq.: 15-035-121. Messrs. Thayer, Worley. Aut. & Win.: 1-0-3.

15-035-132. General Chemistry Laboratory II. Laboratory experiments and demonstrations supplementary to 15-035-122. Prereq.: 15-035-131. Coreq.: 15-035-122. Messrs. Thayer, Worley. Win. & Spr.: 1-0-3.

15-035-133. General Chemistry Laboratory III. Laboratory experiments and demonstrations supplementary to 15-035-123. Prereq.: 15-035-132. Coreq.: 15-035-123. Messrs. Thayer, Worley. Spr. & Sum.: 1-0-3.

15-035-242. Chemical Analysis I. Theory and techniques of gravimetric and titrimetric methods of analysis; principles of chemical separations. Prereq.: 15-035-123, 133. Mr. T. W. Gilbert. Win. & Spr.: 3-3-0.

15-035-243. Chemical Analysis II. Theory and applications of instrumental methods of analysis with emphasis on techniques used for process control. Prereq.: 15-035-242. Mr. T. W. Gilbert. Sum. & Aut.: 2-2-0.

15-035-252. Chemical Analysis Laboratory. Laboratory work supplementary to 15-035-242, illustrating classical and contemporary quantitative analytical procedures. Coreq.: 15-035-242. Mr. T. W. Gilbert. Win. & Spr.: 3-0-11.

15-035-253. Chemical Measurements Laboratory. Laboratory work supplementary to 15-035-243, illustrating analytical methods based on electrochemistry, on the absorption and emission of radiation by matter, and instrumental measurements of physical properties. Prereq.: 15-035-252. Coreq.: 15-035-243. Mr. T. W. Gilbert. Sum. & Aut.: 3-0-10.

Geology

Professor Jenks, Head of Department.

20-040-272. Earth Materials. Occurrence, composition, properties, and identification of common earth materials. The principles and processes concerning their origin. Interpretation of geologic maps. Field trips. Mr. Jenks. Win. & Spr.: 3-2-3.

20-040-472. Engineering Geology. Applications of geology and geologic processes to engineering. Field trips. Prereq.: 20-040-272. Mr. Jenks. Spr.: 3-2-3.

History

Professor Bonner, Head of Department; Professors Bradeen, Engberg, Harlan, Holliday, Schrier, Topping, Vogel, Warner; Associate Professors Beaver, Kafker, Laux, Lewis, Slessarev; Assistant Professors Bowers, Christopherson, Curry, Miller, Mitchell, Shapiro, Sterling, Williams; Instructor Kupferman.

15-075-107. Modern Europe. The European Community and Its Expansion, 1500-1763. The Renaissance, Reformation, overseas expansion, and the age of absolute monarchy. Staff. Sum. & Aut.: 3-3-0.

15-075-108. Modern Europe. Old Regime and Revolution, 1763-1871. The French Revolution, revolutions of 1848, and the age of large nation-states. Staff. Win. & Spr.: 3-3-0.

15-075-110. American History, 1607-1846. The expansion of Europe; Colonial America; American Revolution and Constitution; Jeffersonian and Jacksonian Democracy. Staff. Sum. & Aut.: 3-3-0.

15-075-111. American History, 1846-1916. Coming of the Civil War; Reconstruction; development of Modern America; emphasis on intellectual and scientific trends. Staff. Win. & Spr.: 3-3-0.

15-075-322. World History Since 1900. The First World War and its attendant upheavals; the Great Depression in the U. S. and Europe, totalitarianism; revolutions in Asia and Latin America. Staff. Win.: 3-3-0.

15-075-323. World History Since 1900. The Second World War and communist expansion; the end of colonialism, the revival of Europe, the Cold War. Staff. Spr.: 3-3-0.

Economics

Staff.

22-080-451. Principles of Economics I. Analysis of the economics of the business firm; supply and demand analysis; pricing; allocation of resources. Mr. Powers. Sum. & Aut.: 3-3-0.

22-080-452. Principles of Economics II. Analysis of the operation of the economic system; national income analysis; money and banking; economic problems. Prereq.: 22-808-451. Mr. Powers. Win. & Spr.: 3-3-0.

Reserve Officers Training Corps

Department of Military Science
Department of Air Science

The University maintains two volunteer Reserve Officers Training Corps in connection with the United States Government. Details are given on page xi, Part 1.

Military Science (Army ROTC)

Colonel Robert E. Connor, United States Army, Professor of Military Science, and Staff.

The Army ROTC four-year program for cooperative and noncooperative students is as follows:*

20-111-111, 112, 113. Military Science I. Organization of the Army and ROTC; Individual Weapons and Marksmanship; U. S. Army and National Security; Leadership Laboratory. 1 ug. cr. each Qtr.

20-111-211, 212, 213. Military Science II. American Military History; Map and Aerial Photograph Reading; Introduction to Operations and Basic Tactics; Leadership Laboratory. 1 ug. cr. each Qtr.

20-111-311, 312, 313. Military Science III. Leadership; Military Teaching Principles; Branches of the Army; Small Unit Tactics and Communications; Counterinsurgency Operations; Pre-Camp Orientation, Leadership Laboratory. 3 ug. cr. each Qtr.

20-111-411, 412, 413. Military Science IV. Operations, Logistics, Army Administration; Military Law; Role of the U. S. in World Affairs; Service Orientation; Map Reading Review; Leadership Laboratory. 3 ug. cr. each Qtr.

Summer Camp (Six weeks)

Practical Leadership Training; Physical Training and Organized Athletics; Chemical, Biological, and Radiological Warfare; First Aid; Individual Weapons and Marksmanship; Crew-Served Weapons; Organization, Functions, and Missions of Arms and Services; Practical Map and Aerial Photograph Reading, and Terrain Appreciation; Field Fortifications, Pioneering, and Camouflage; Signal Communications; Tactics, both Offense and Defense.

Air Science (Air Force ROTC)

Lt. Colonel Walter E. Stueck, United States Air Force, Professor of Air Science, and Staff.

The Air Force ROTC four-year program for cooperative and noncooperative students is as follows:*

20-112-101,102,103. Air Science 100: World Military Systems. Nationalism and Sovereignty; Comparative Analysis of Democracy and Communism; the United States and World Affairs; the Military Instrument of National Security; Missions and Functions of Specific Air Force Commands; Professional Opportunities in the USAF; Corps Training. 1 ug. cr. each Qtr.

20-112-201,202,203. Air Science 200: World Military Systems (contd.). Mission, Organization and Operation of the U. S. Army, U. S. Navy, and U. S. Air Force; Treaty Organizations (NATO, CENTO, and SEATO); Communist Military Systems; Trends and Implications of World Military Powers; Corps Training. Air Science 201 consists of classes 3 days per week plus Corps Training, and will be offered in the Autumn and Winter Quarters. Air Science 202 and 203 consist of Corps Training only. 1 ug. cr. each Qtr.

*All Army and Air Force ROTC students take courses in the approximate order listed. Noncooperative students complete the course in four years while the cooperative students require five years. Courses are elective; credits are in excess of minimum required for degree. In addition to the four-year program, both Army and Air Force offer a two-year ROTC program which consists of a summer basic training camp prior to the junior year and the completion of the last two years of the ROTC program.

20-112-301,302,303. Air Science 300: Growth and Development of Aerospace Power. Communication; Nature of War; History of Air Power; Air Force Concepts, Doctrine and Employment; Astronautics and Space Operations; Future of Aerospace Power; Corps Training. 3 ug. cr. each Qtr.

20-112-401,402,403. Air Science 400: The Professional Officer. Military Professionalism; Military Justice; Theories of Leadership; Human Relations; Principles and Functions of Management; Channels of Communication; Problem Solving; Corps Training. 3 ug. cr. each Qtr.

The Air Force ROTC two-year program for cooperative and noncooperative students consists of Air Science 300 and 400, as described above.

Summer Camp

AFROTC Field Training (six weeks). Similar to the four-week field training, except that approximately two weeks are devoted to presenting selected portions of the freshman and sophomore years' academic work in Air Science, designed to increase the student's basic knowledge in order to prepare him academically for entrance into the Professional Officer Course.

AFROTC Field Training (four weeks). Practical Leadership Training; Physical Training and Organized Athletics; Survival Training; Aircraft and Aircrew Indoctrination, including orientation flights in various aircraft; Organization and Functions of an Air Force base, including orientation to Flight Operations, Aircraft Maintenance, Supply, Transportation, Comptroller, Communications, Medical, Food Service, Personnel Services and Security; Career Orientation; Small Arms Familiarization; and other supplemental training as individual Air Force bases may provide, such as Chemical, Biological and Radiological Training, Firepower Demonstrations and visits to nearby military and NASA facilities.

Officer Basic Military Training Course (six weeks) and Advanced Field Training Course (four weeks).

The General Military Course (Basic AFROTC training) must be completed as a prerequisite for entry into the Professional Officer Course (Advanced AFROTC training). This training may be accomplished by completing either the first two years of the four-year program or a six-week Officer Basic Military Training Course (OBMT), prior to entry into the Professional Officer Course. Students in the four-year program will be required to complete successfully a four-week Advanced Field Training Course, as a prerequisite for commissioning. Pay for the six-week program will be at a rate of $78 per month. Reimbursement for the Advanced Training Course is $120.60 per month and travel expenses of 6 cents per mile to and from the training site for both training sessions.

Engineering Profession

20-250-171,172. Engineering Profession I, II. An introduction to the principles and purposes of engineering education; heritage of the engineering profession; characteristics of modern engineering. Mr. Delcamp and Staff. Win. & Spr.: 1-0-3.

Aerospace Engineering

Professor Harrington, Head of Department; Professors Lee, Sheng; Adjunct Professor Li; Associate Professors Elnan, Kroll, Oguro, Tabakoff; Adjunct Associate Professors Macke, Walchner; Assistant Professors Dale, Polak; Instructors Slater, Tepe; Lecturer Hess.

20-251-271. Introduction to Aerospace Engineering. Basic features and nomenclature of aerospace vehicles. Quasi-statics of vehicles in flight considered as point-mass systems. Gliding flight. Mr. Tabakoff. Sum. & Aut.: 2-2-0.

20-251-272. Experimental Stress Analysis. Experimental stress analysis using strain gages and photostress with related electronic instrumentation. Applications and theory of transducers. Theory and experiments. Prereq.: 20-031-375. Mr. Kroll. Sum. & Aut: 1-0-4.

20-251-342. Dynamics of Ideal Fluids I. Fundamental equations of fluid dynamics, potential theory, theory of lift. Prereq.: 20-031-383. Mr. Slater. Win. & Spr.: 2-2-0.

20-251-343. Dynamics of Ideal Fluids II. Conformal mapping of airfoils, thin airfoil theory, finite airfoil theory. Prereq.: 20-251-342. Mr. Slater. Sum. & Aut.: 3-3-0.

20-251-372. Applied Aerodynamics. Aerodynamics and performance of aircraft; optimization of various performance quantities; application of theory to special problems. Prereq.: 20-251-271. Mr. Slater. Win. & Spr.: 4-3-3.

20-251-441. Aircraft Structures I. The analysis and design of lightweight aircraft structures. Shear flow, stressed skin aircraft elements, shear lag. Experiments. Prereq.: 20-031-375; 20-251-272; 20-025-272,371. Mr. Kroll. Sum. & Aut.: 4-3-4.

20-251-442. Aircraft Structures II. Continuation of Aircraft Structures I. Shear lag, structural stability, beam-columns, semitension field beams, theory of failures. Experiments. Prereq.: 20-251-441. Mr. Kroll. Win. & Spr.: 4-3-4.

20-251-444. Gas Dynamics I. Brief review of thermodynamic concepts. Equations of one-dimensional gas motion. The normal shock wave, wave propagation and the speed of sound. Oblique shock waves. Prereq.: 20-031-383,385. Mr. Dale. Win. & Spr.: 3-3-0.

20-251-445. Gas Dynamics II. Prandtl-Meyer flow, shock wave—Mach wave interaction. Flow in variable area ducts. Small perturbation theory and its application to thin airfoil theory and the method of characteristics. Experimental methods in supersonic flow. Prereq.: 20-251-444. Mr. Dale. Sum. & Aut.: 4-3-3.

20-251-471. Problems in Aerospace Engineering. Special problems and mathematical techniques as applied to Aerospace Engineering problems. Prereq.: 20-025-371. Staff. Sum. & Aut.: 3-3-0.

20-251-473. Viscous Flow. Introduction to viscous flow, derivation of the Navier-Stokes equations. Solution of the equations of motion for low and high Reynolds numbers, the incompressible laminar boundary layer, Blasius solutions, Karman-Pohlhausen analysis. Prereq.: 20-031-383; 20-025-371. Mr. Tabakoff. Sum. & Aut.: 2-2-0.

20-251-474. Boundary Layer. Heat transfer in boundary layer. Turbulent boundary layer. Compressibility effects. Stagnation point flow. Prereq.: 20-251-473. Mr. Oguro. Win. & Spr.: 4-3-4.

20-251-501,502,503. Thesis I,II,III. A thorough report on a special problem or investigation selected by each student. Staff. Sum. & Aut.: 2-0-6; Win.: 2-0-8; Spr.: 2-0-8.

20-251-541. Aeromechanics I. Static stability and control of aircraft. Generalized dynamics of atmospheric flight vehicles in the absence of automatic or human control. Prereq.: 20-251-343,372. Mr. Elnan. Sum. & Aut.: 3-3-0.

20-251-542. Aeromechanics II. Small-perturbation dynamics of atmospheric flight vehicles in the absence of automatic or human control. Response of aircraft to actuation of controls. Prereq.: 20-251-541,471. Mr. Elnan. Win.: 3-3-0.

20-251-544. Control Theory. Fundamentals of feedback control systems; transfer functions; root-locus and frequency response methods in control system analysis. Coreq.: 20-251-541. Mr. Slater. Sum. & Aut.: 3-3-0.

20-251-546. Control Laboratory. Investigation into the characteristics of actual control systems; compensation techniques. Prereq.: 20-251-544. Mr. ————————. Spr.: 1-0-3.

20-251-547. Advanced Structural Theory I. Elementary elasticity equations. Principle of virtual displacements and minimal principles. Application to statically indeterminate structures and buckling problems. Prereq.: 20-251-441,442; or consent of instructor. Mr. Kroll. Win.: 3-3-0.

20-251-548. Advanced Structural Theory II. Plate Bending. Membrane theory of shells. Beams on elastic foundations. Prereq.: 20-251-441,442; or consent of instructor. Mr. Kroll. Spr.: 3-3-0.

20-251-571. Solid Body Mechanics. Introduction to the concepts of elasticity, thermal stresses, viscoelasticity, material properties, and plasticity. Selected problems from each of these topics. Prereq.: 20-031-375; 20-251-441,442; or consent of instructor. Mr. Sheng. Spr.: 3-3-0.

20-251-572. Trajectory Dynamics. Selected topics from flight mechanics including flight in a resisting medium and in a vacuum. Orbital motion in a central force field. Prereq.: 20-025-371; 20-251-471; or consent of instructor. Mr. Elnan. Spr.: 4-4-0.

20-251-574. Propulsion Systems. Aerothermodynamic foundations of propulsion theory. Steady and nonsteady ducted flows. Cycle thermodynamics, cycle and analysis of turbojet, ramjet, turbo-prop, rocket engines. Combustion in general. Turbo machinery. Aerodynamic design of compressors, turbines, and rockets. Prereq.: 20-031-381,383; 20-251-445. Mr. Tabakoff. Win.: 4-3-3.

20-251-576. Rocket Propulsion. Application of gas dynamics and thermodynamics to the analysis of design of rocket engines. Preliminary design considerations of a rocket engine for a missile or satellite. "Exotic" rocket propulsion systems: ion-jet, plasma-jet, arc-heated jet, and nuclear-reactor-heated jet. Prereq.; 20-031-381,383; 20-251-574; or consent of instructor. Mr. Tabakoff. Spr.: 3-3-0.

20-251-578. Advanced Vibrations. Free, forced, and damped vibration of continuous bodies such as bars and beams and more complex structures similar to airplane wings. Systems with a large number of degrees of freedoms with applications of lumped parameter systems in lieu of continuous systems. Approximate solutions. Demonstration experiments to verify theory. Prereq.: 20-263-485. Mr. Dale. Win.: 3-3-0.

20-251-582. Combustion Theory. General nature of the combustion process. Combustion of a thermodynamic equilibrium. Combustion of a chemical kinetic process. Chain reaction and the phenomena of detonation fuels, injection (fuel nozzle), and ignition. Combustion chamber analysis for design and rocket propellant. Prereq.: 20-031-381,383. Mr. Tabakoff. Spr.: 3-3-0.

20-251-584. Random Vibrations. The response of linear systems to random excitation. Probabilistic fundamentals needed are covered in this course. Prereq.: 20-263-485. Mr. Kroll. Spr.: 3-3-0.

20-251-586. Performance Optimization. The optimum performance of aircraft at subsonic and supersonic speeds using ordinary theory of maxima and minima and Lagrange multipliers. Range, endurance, maximum speed, rate of climb. Applications, using digital computer methods. Prereq.: 20-251-541,542. Mr. Elnan. Spr.: 3-3-0.

20-251-588. Introduction to Astronautics. Rocket staging principles. Properties of the atmosphere. Introduction to astronomical constants, time, and coordinate systems. Re-entry problems and orbit decay. Orbit transfer and interplanetary trajectories. Coreq.: 20-251-572. Mr. Slater or Mr. Tepe. Spr.: 3-3-0.

Chemical Engineering

Professor Licht, Head of Department; Professors Delcamp, N. Gilbert, Lemlich, Price; Adjunct Professor Conway; Associate Professors Cosgrove, Hershey, Leonard, Moon; Adjunct Associate Professor Hutchins; Assistant Professor Abegg.

20-254-241. Elements of Chemical Engineering. Survey of chemical engineering and the principles involved; introduction to the technical literature; material balance calculations in industrial processes. Prereq.: 15-035-123. Mr. Licht. Sum. & Aut.: 3-2-3.

20-254-342. Energy Balances. Energy balance calculations for industrial chemical and metallurgical processes. Prereq.: 20-254-241; 20-031-381. Coreq.: 20-254-372. Mr. Lemlich. Win. & Spr.: 3-2-4.

20-254-372. Chemical Thermodynamics. Chemical thermodynamics, homogeneous and heterogeneous equilibrium; electrochemistry. Prereq.: 20-031-381; 15-035-123. Mr. Price. Win. & Spr.: 5-5-0.

20-254-373. Topics in Physical Chemistry. Kinetic theory, colloid and surface chemistry, photochemistry. Prereq.: 20-254-372. Mr. Price. Win. & Spr.: 3-3-0.

20-254-375. Experimental Physical Chemistry. Experiments in thermodynamics, reaction kinetics, electrochemistry, colloid chemistry, radiation chemistry, etc. Prereq.: 20-254-372. Mr. Price. Sum. & Aut.: 4-0-12.

20-254-450. Organic Structures and Processes I. Structure theory and reaction mechanisms; hydrocarbons and alcohols-syntheses, reactions and industrial processes; general laboratory techniques, and identification procedures. Prereq.: 15-035-123,133. Mr. Cosgrove. Win. & Spr.: 5-4-4.

20-254-451. Organic Structures and Processes II. Organic halides, ethers, acids, amines, phenols, aldehydes and ketones-syntheses, reactions and industrial processes; laboratory syntheses, and identification of functional groups. Prereq.: 20-254-450. Mr. Cosgrove. Sum. & Aut.: 5-4-4.

20-254-471. Equilibrium Processes. Nonideal behavior of fluids, complex physical and chemical equilibria, and ideal stagewise operations. Prereq.: 20-254-372; 20-254-342. Mr. Moon. Sum. & Aut.: 5-5-0.

20-254-472. Physical Rate Processes. Unified approach to the physical differential rate processes. Applications in momentum, heat, and mass transfer operations. Prereq.: 20-031-383,385. Mr. Hershey. Win. & Spr.: 4-4-0.

20-254-473. Chemical Rate Processes. The principles of energy and mass transport and of chemical rate processes applied to the design of process equipment. Prereq.: 20-254-472. Mr. Abegg. Sum. & Aut.: 4-4-0.

20-254-482. Chemical Engineering Laboratory I. Laboratory studies illustrating the principles of transport phenomena. Preparation of technical reports. Prereq.: 20-254-471; 20-031-383,385. Mr. Hershey. Win. & Spr.: 1-0-4.

20-254-483. Chemical Engineering Laboratory II. Laboratory studies illustrating the application of rate process principles in chemical engineering. Prereq.: 20-254-472. Coreq.: 20-254-473. Mr. Moon. Sum. & Aut.: 2-0-8.

20-254-491. Transport Operations Design. Application of the principles of equilibrium processes and physical rate processes to the design of chemical processing equipment. Prereq.: 20-254-471,472. Mr. Moon. Sum. & Aut.: 4-4-0.

20-254-541. Process Design and Economics. Economic factors in the development, design, and operation of chemical processes. Prereq.: Senior standing. Mr. N. Gilbert. Spr.: 3-3-0.

20-254-542,543. Process Design Project I, II. Application of fundamental theory and economic factors in the design of chemical processes and equipment. Coreq.: 20-254-541. Messrs. Moon, Abegg. Win.: 2-0-8; Spr.: 2-0-8.

20-254-551,552. Senior Research Project I, II. Independent theoretical and experimental investigation by individual students. Optional with 20-254-542 to selected students. Prereq.: Senior standing. Mr. Licht and Staff. Win.: 2-0-8; Spr.: 2-0-8.

20-254-571,572. Process Dynamics and Control. Principles of automatic control and process dynamics applied to analysis and design of systems for the chemical process industries; examples of measurement and control. Prereq.: 20-025-272. Mr. N. Gilbert. Win.: 4-4-0; Spr.: 1-0-4.

20-254-591. Industrial Microbiology. Morphology, cultivation, and control of microorganisms; their importance in water, food, and fermentations. Prereq.: 20-254-451, or 20-257-646. Mr. Delcamp. Spr.: 3-3-0.

20-254-592. Application of Absorption Spectroscopy. Ultraviolet, infrared, and nuclear magnetic resonance spectroscopy. Theory and interpretation in the study of organic materials. Prereq.: 20-254-451. Mr. Cosgrove. Win.: 3-3-0.

20-254-593. Polymeric Materials. Polymerization theory and methods; relation between properties and polymer structure; important types of fibers, plastics, and elastomers. Prereq.: 20-254-451. Mr. Delcamp. Win.: 3-3-0.

20-254-594. Structure of Matter. Molecular and crystal structure. Prereq.: 20-254-373. Mr. Price. Spr.: 3-3-0.

20-254-596. Lubricants and Lubricant Applications. Theories of friction and wear; mechanisms of lubrication; structure-properties relationships; lubricant additives; selective and evaluation of lubricants. Mr. Cosgrove. Spr.: 3-3-0.

20-254-597. Introduction to Nuclear Engineering. Introduction to nuclear fission and analysis of neutron chain reactions; study of nuclear reactors including criticality, control and shielding. Mr. Leonard. Prereq.: 20-030-273. Win.: 3-3-0.

20-254-598. Nuclear Engineering Laboratory. Principles, techniques and equipment used in detecting and analyzing nuclear radiations. Industrial applications of nuclear energy and radiation safety considerations. Mr. Leonard. Prereq.: 20-254-597. Spr.: 2-1-3.

Civil Engineering

Professor Laushey, Head of Department; Professors Eye, Howe, Ringo; Associate Professors Preul, Scarpino; Adjunct Associate Professors Gruber, Kramer; Assistant Professors Morand, Rubin; Instructors Bodocsi, McDonough; Lecturers Krusling, Lewis, Mellinger.

20-257-271. Civil Engineering I. Civil engineering analysis. Development of ethical and technical attitudes of the professional engineer. Seminars and inspection trips. Individual and group problems. Staff. Sum. & Aut.: 2-1-3.

20-257-272. Surveying I. Applications of aerial photogrammetry and photo interpretation to surveying; map projections; traverse calculations; property surveys; contours. Prereq.: 20-272-273. Mr. Howe. Win. & Spr.: 3-2-4.

20-257-373. Surveying II. Design of a survey; horizontal, vertical, and angular measurements; plane table mapping; engineering astronomy; route surveying. Prereq.: 20-257-272; 20-025-278. Mr. Howe. Sum. & Aut.: 5-3-8.

20-257-380. Structural Engineering I. Integrated analysis and design of civil engineering structures. Axially stressed members and determinate trusses. Steel; reinforced concrete; timber. Prereq.; 20-257-391. Messrs. Ringo, McDonough. Win. & Spr.: 4-3-3.

20-257-391. Applied Strength of Materials. Applied theory and experiments on beams, columns, shafts, and plates. Stress concentration, fatigue, and creep. Use of strain gages, stresscoat, photoelasticity, and other techniques. Prereq.: 20-031-375. Mr. Bodocsi and Staff. Each Qtr.: 3-2-3.

20-257-441. Sanitary Engineering I. Engineering aspects of water resources. Development and control for public water supply, flood control, and waste water disposal. Coreq.: 20-031-383. Mr. Morand. Sum. & Aut.: 4-3-3.

20-257-442. Sanitary Engineering II. Application of the basic principles of chemistry, microbiology, and engineering design in providing safe and adequate public water supplies, and in the treatment and ultimate disposal of liquid-borne wastes. Prereq.: 20-257-441. Mr. Morand. Win. & Spr.: 4-3-3.

20-257-471. Plane Surveying. Surveying techniques of interest to architects. Field problems, mapping, and calculations. Mr. ————————. Spr. & Sum.: 2-1-3.

20-257-475. Construction Materials. General characteristics, physical properties, methods of manufacture and mixing, and the uses of the materials of construction. Prereq.: 20-031-373. Mr. Bodocsi. Sum. & Aut.: 4-2-6.

20-257-476. Soil Mechanics. Soils as construction materials. Soil moisture, classification, permeability, seepage, earth pressure, subsurface investigation, and compaction. Prereq.: 20-031-383; 20-040-272. Mr. Bodocsi. Win. & Spr.: 4-3-3.

20-257-481. Structural Engineering II. Integrated analysis and design of determinate and indeterminate civil engineering structures. Metal flexural members and their connections. Design of reinforced concrete. Prereq.: 20-257-380. Messrs. Ringo, McDonough. Sum. & Win.: 4-3-3.

20-257-482. Structural Engineering III. Integrated analysis and design of civil engineering structures. Determinate trusses, frames, and their connections. Floor systems. Steel; reinforced concrete. Prereq.: 20-257-481. Messrs. Ringo, McDonough. Win. & Spr.: 4-3-3.

20-257-492. Hydraulic Engineering I. Theory, design, and laboratory experiments. Pipe flow, measuring devices, open channels, and machinery. Jets. Pipe networks. Unsteady flow. Prereq.: 20-031-383. Messrs. Laushey, Preul. Win. & Spr.: 4-3-3.

20-257-501,502,503. Senior Project. An original report of a study, design, or investigation which demonstrates the ability of the student to undertake individual responsibility on a comprehensive civil engineering project. Staff. 1-0-4; 3-0-12; 3-1-8.

20-257-551. Highway Engineering I. Impact of highways on urban places; traffic engineering; highway planning, economics, and financing; and geometric design. Prereq.: 20-257-373,476. Mr. Howe. Sum. & Aut.: 4-3-3.

20-257-552. Highway Engineering II. Design and construction of highways; drainage; rigid and flexible pavements; highway maintenance. Discussion of current transportation problems. Prereq.: 20-257-441,551. Mr. Howe. Win.: 3-3-0.

20-257-583. Structural Engineering IV. Advanced analysis and design of civil engineering structures. Indeterminate frames and continuous beams. Moment connections. Matrix notation. Interaction of force systems. Steel and reinforced concrete. Prereq.: 20-257-482. Mr. Ringo. Sum. & Aut.: 4-3-3.

20-257-598. Seminar in Fundamental Aspects of Engineering. Discussions by faculty and students of all departments on problems of measurement, energy, fields, nuclear physics, etc. Designed to show similarities and differences of approaches to common problems by various branches of engineering. Staff. Win. or Spr.: 3-1-2.

20-257-599. Honors Seminar in Current Civil Engineering Problems. Students will select a current civil engineering project, discuss the impact of this project on its surroundings, the technical problems, and possible alternate solutions. Admission by permission of Civil Engineering Faculty. 3-1-6.

20-257-641,642,643. Environmental Science and Engineering Seminar. Students will present a discussion and a detailed report on a topic related to the control of the environment. Staff. Sum. or Aut., Win. & Spr.: 1-0-2.

20-257-645. Environmental Science and Engineering I. A survey of public health practices as related to environmental control. Insect and rodent control, milk and food sanitation, refuse disposal, housing. Mr. Eye. Sum. or Aut.: 2-2-0.

20-257-646. Environmental Science and Engineering II. An introduction to the principles of biology and microbiology as used to characterize and control the environment. Mr. Scarpino. Win.: 3-2-3.

20-257-647. Environmental Science and Engineering III. An introduction to chemical principles, as used for the characterization and control of the environment. Mr. Rubin. Win.: 3-2-3.

20-257-648. Environmental Science and Engineering IV. The application of engineering principles as applied to the design of environmental control systems. Mr. Morand. Spr.: 3-1-4.

20-257-671. Traffic Engineering Studies. Studies and analyses of behavior of drivers and vehicles, and operating characteristics of intersections. Effects of traffic signs and signals. 3 ug. or gr. cr. Mr. Howe. Spr.: 3-2-3.

20-257-673. Geometric Design of Highways. Horizontal, vertical, and spiral curves. Design of alignment by photogrammetric methods. 3 ug. cr. Evening. Mr. Howe. Spr.: 3-2-2.

20-257-674. Urban Transportation. Interrelationship of land use and movement. Parking. Mass transit. Transportation terminals. Organization and administration of urban transportation projects. 3 ug. cr. Evening. Mr. Howe. Win.: 3-3-0.

20-257-681. Foundation Engineering I. Applications of soil mechanics to slope and foundation problems. Slope stability, pressures on retaining walls, soil stresses and settlements under footings, soil action in pile foundations. Prereq.: 20-257-476. Mr. Bodocsi. Win.: 3-3-0.

20-257-682. Foundation Engineering II. Analysis and design of substructures. Piles and pile groups. Sheet piling. Retaining walls. Cofferdams. Caissons. Prereq.: 20-257-681. Mr. Bodocsi. Spr.: 3-3-0.

20-257-683. Prestressed Concrete. Pretensioning and posttensioning. Losses, flexure, shear, and bond. Prestressing systems. Ultimate strength. Precast units. Prereq.: 20-257-583. Mr. McDonough. Win.: 3-3-0.

20-257-684. Composite Designs. Composite beams of steel and concrete and of hybrid steels. Shear connections. Deflections. Ultimate strength. Prereq.: 20-257-583. Mr. Ringo. Win.: 3-3-0.

20-257-685. Advanced Analysis of Structures. Extension and intensification of structural mechanics of analysis. Elastic and ultimate analyses. Matrix analysis of structures. Prereq.: 20-257-583. Mr. Ringo. Win.: 3-3-0.

20-257-687. Special Structural Topics. Topics such as structural dynamics, elementary shell analysis, etc. Content suited to class and instructor. Prereq.: 20-257-583. Mr. Ringo. Spr.: 3-3-0.

20-257-688. Matrix Analysis of Structures. Matrix theory and digital computer techniques for the solution of structural problems. Prereq.: 20-257-583. Mr. McDonough. Spr.: 3-3-0.

20-257-691. Hydraulic Measurements. Laboratory and field methods for measurement of hydraulic pressure, velocity and discharge. Prereq.: 20-031-383. Mr. Preul. Win.: 3-2-3.

20-257-692. Hydraulic Systems and Controls. Theory and solution of engineering applications of fluid mechanics in hydraulic systems, including piping, machinery, and controls. Related laboratory problems. Prereq.: 20-031-383. Mr. Preul. Spr. 3-2-3.

20-257-693. Hydraulic Engineering II. Pipe networks. Storm sewer design. Flow in culverts. Reservoir routing. Water hammer. Ground water flow, wells, and flow nets. Sedimentation. Model studies. Prereq.: 20-257-492. Mr. Laushey. Win.: 3-2-3.

20-257-694. Hydraulic Engineering III. Open channel flow: nonuniform and unsteady. Waves. Flood routing. Erosion. Flood control and water power. Design of hydraulic structures. Prereq.: 20-257-492 or 692. Mr. Laushey. Spr.: 3-2-3.

20-257-696. Civil Engineering Systems. Use of linear algebra, linear programming, critical path, and digital computers to analyze, design, and optimize civil engineering projects in hydraulics, structures, transportation, and construction. Mr. Laushey. Spr.: 3-2-2.

Electrical Engineering

Professor Herweh, Acting Head of Department; Professors Bereskin, Engelmann, Evert, Middendorf, Restemeyer; Associate Professor Osterbrock; Assistant Professor Raible; Instructors Mullins, Scheide, Wagner, Wang.

20-260-344. Network Analysis I. Network theorems, matrix methods, Fourier series, Fourier and Laplace transforms. Prereq.: 20-031-372. Messrs. Middendorf, Osterbrock, Raible, Wagner. Win. & Spr.: 5-5-0.

20-260-345. Network Analysis II. Advanced concepts using Laplace transforms, signal flow graphs, feedback systems, filter design. Prereq.: 20-260-344. Messrs. Middendorf, Osterbrock, Raible. Sum. & Aut.: 5-5-0.

20-260-374. Electromagnetic Fields. Definitions of electric and magnetic field quantities. Maxwell's equations with applications to plane waves, energy flow, and field-network relationships. Prereq.: 20-025-371. Messrs. Herweh, Osterbrock. Win. & Spr.: 3-3-0.

20-260-382. Measurements Laboratory. Electrical measurement techniques for electrical and other physical quantities. Accuracy of measurements, interpretation of data, limitations of devices and techniques. Coreq.: 20-031-372. Messrs. Mullins, Scheide, Wagner. Each Qtr.: 2-0-6.

20-260-384. Analog Laboratory. Solution of differential equations with the electronic differential analyzer. Investigation of transients in electric networks. Coreq.: 20-031-372. Messrs. Osterbrock, Wagner, Wang. Each Qtr.: 2-0-6.

20-260-441. Electrical Machinery I. Steady-state theory of static electromagnetic devices. Prereq.: 20-260-344; 20-260-374. Messrs. Herweh, Wang. Sum. & Aut.: 4-3-2.

20-260-442. Electrical Machinery II. Steady-state theory of rotating machines. Prereq.: 20-260-441. Messrs. Scheide, Wang. Win. & Spr.: 4-4-0.

20-260-444. Machinery Laboratory. Selected experiments utilizing transformers, A-C and D-C rotating machinery, and magnetic amplifiers. Coreq.: 20-260-442. Messrs. Scheide, Wang. Win. & Spr.: 2-0-6.

20-260-452. Electronics I. Principles of semiconductor physics with applications to pn junctions and transistors. Equivalent circuit diagrams and applications of transistors. Prereq.: 20-031-372. Coreq.: 20-260-344. Messrs. Scheide, Wagner. Win. & Spr.: 5-4-2.

20-260-453. Electronics II. Electron ballistics, thermionic emission, gas and vacuum diodes and multielement tubes, equivalent circuit diagrams and applications. Prereq.: 20-260-344; 20-260-452. Messrs. Engelmann, Herweh, Scheide. Sum. & Aut.: 4-4-0.

20-260-454. Electronics III. Frequency response of amplifiers, screen and cathode, video amplifiers, RC oscillators, switching circuits, transformer coupled and tuned amplifiers. Prereq.: 20-260-345; 20-260-453. Mr. Engelmann. Win. & Spr.: 5-5-0.

20-260-457. Electronics Laboratory I. Static and dynamic measurements of vacuum tube and solid state devices, circuits with elementary linear applications. Prereq.: 20-260-452. Coreq.: 20-260-453. Messrs. Engelmann, Mullins, Scheide. Sum. & Aut.: 2-0-6.

20-260-458. Electronics Laboratory II. Selected projects in electronic circuits designed to give the student practical experience in meeting specifications. Prereq.: 20-260-453. Coreq.: 20-260-454. Messrs. Engelmann, Mullins. Win. & Spr.: 1-0-3.

20-260-486. Feedback Control. Principles of automatic control, transient and steady-state response. Transfer functions and stability criteria. Prereq.: 20-031-372; also a course introducing Laplace transforms. Messrs. Engelmann, Raible, Wagner. Sum. & Aut.: 4-4-0.

20-260-501. Thesis I. Theoretical and experimental investigation by the individual student based upon a formal proposal approved by the staff. Prereq.: Senior standing. Staff. Sum. & Aut.: 2-0-6.

20-260-502. Thesis II. Continuation of thesis work. Seminars. A formal, comprehensive report of each investigation is bound and deposited in the University Library. Prereq.: 20-260-501. Staff. Win.: 2-0-6.

20-260-555. Communication Circuits. Untuned and tuned power amplifiers, oscillators, modulators, and detectors. Radio transmitters and receivers. Prereq.: 20-260-454. Messrs. Bereskin, Scheide. Sum. & Aut.: 3-3-0.

20-260-560. Electronic Circuit Design. Selected communications problems with design solutions and experimental verification. Prereq.: 20-260-555. Messrs. Bereskin, Scheide. Win.: 2-0-6.

20-260-571. Design Engineering. Modern design techniques including decision theory, optimization procedures, and design by computer. Prereq.: Senior standing. Mr. Middendorf. Sum. & Aut.: 3-3-0.

20-260-572. Design Engineering Laboratory. Application of modern design techniques to selected problems. Experimental verification where possible. Prereq.: 20-260-571. Mr. Middendorf. Win.: 2-0-6.

20-260-574. Digital Circuits Laboratory. Selected experiments in logic design employing bistable elements, shift register, adders, and decoding networks. Machine language programming. Prereq.: 20-260-673. Mr. Evert. Spr.: 2-0-6.

20-260-576. Analog Computation Laboratory. Selected experiments in linear and nonlinear systems using the electronics differential analyzer. Analog simulation of the digital computer and equation solvers. Prereq.: 20-260-674. Mr. Evert. Win. 2-0-6.

20-260-578. UHF Laboratory. Experiments on circuits and devices used at ultra-high frequencies. Prereq.: 20-260-682. Mr. Bereskin. Spr.: 2-0-6.

20-260-582. Engineering Analysis. Applications of statistical methods to electrical engineering. Discrete and continuous distribution functions, Markov processes, reliability. Prereq.: Senior standing. Mr. Scheide. Spr.: 3-3-0.

20-260-586. Feedback Control Laboratory. Experimental and theoretical determination of performance of typical components and uncompensated systems. Design and test of suitable compensation. Prereq.: 20-260-486. Messrs. Raible, Wagner. Spr.: 2-0-6.

20-260-671. Transmission Lines. Steady-state and transient analysis of distributed parameter electrical systems. Transmission line charts. Stubs, transformers, and matching sections. Prereq.: 20-260-345; 20-260-374. Messrs. Engelmann, Osterbrock, Restemeyer. Win. & Spr.: 3-3-0.

20-260-672. Field Theory. Field and constitutive equations of distributed parameter systems. Wave-guide transmission, radiation, special topics in electromagnetic fields. Prereq.: 20-260-374; 20-031-383. Mr. Osterbrock. Win.: 4-4-0.

20-260-673. Digital Computers. Fundamentals of digital computers and design logic. Boolean algebra, simplification of Boolean functions, number systems. Prereq.: 20-260-454. Messrs. Evert, Raible. Win.: 3-3-0.

20-260-674. Analog Computation. Fundamentals of analog techniques, direct and indirect analogs, scaling, and the electronic differential analyzer. Prereq.: 20-260-454; 20-025-272. Messrs. Wagner, Evert. Sum. & Aut.: 3-3-0.

20-260-678. Communication Theory. Basic concepts of random time functions, modulation, and information theory as applied to communication systems. Prereq.: Senior standing. Messrs. Osterbrock, Scheide. Spr.: 3-3-0.

20-260-680. Energy Conversion. Fundamentals of electromechanical energy conversion. Generalized theory of rotating machines. Prereq.: 20-260-442. Messrs. Herweh, Wang. Spr.: 3-3-0.

20-260-682. UHF Techniques. A study of circuits, devices, and measurement techniques used at ultra-high frequencies. Prereq.: 20-260-555; 20-260-671. Mr. Bereskin. Win.: 3-3-0.

20-260-686. Feedback Control System Design. Design methods in feedback systems to meet transient and steady-state specifications. Real and complex frequency approaches. Prereq.: 20-260-486. Messrs. Engelmann, Raible. Win.: 3-3-0.

20-260-696. Nonlinear Control Systems. Analysis of nonlinear control systems with principal emphasis on phase-plane analysis and describing functions. Prereq.: 20-260-486. Messrs. Engelmann, Raible. Spr.: 3-3-0.

Mechanical Engineering

Professor Schleef, Head of Department; Professors Baldwin, Morse, Tse; Visiting Professor Okamura; Adjunct Professors Hahn, Merchant; Associate Professors English, Lemon; Assistant Professors Brown, Zerkle; Adjunct Assistant Professor Kegg; Instructors Erickson, Espelage, Grissom, Scroggin, Shapton, Sherlock, Shupe, Stephens; Acting Instructor Allis; Research Assistant Comstock.

20-263-360. Theory of Machines I. Motion analysis of machine elements such as gears, cams, and linkages. Prereq.: 20-031-113. Win. & Spr.: 4-3-3.

20-263-361. Theory of Machines II. Static and dynamic force analysis of machines. Balancing; flywheel analysis and design. Prereq.: 20-263-360. Sum. & Aut. 4-3-3.

20-263-450. Engineering Thermodynamics I. Availability; cycles; general relations for pure substances; mixtures; chemical reactions and equilibrium. Prereq.: 20-031-381. Sum. & Aut.: 4-4-0.

20-263-451. Engineering Fluid Mechanics I. Compressible flow; flow of the ideal fluid. Prereq.: 20-031-383. Win. & Spr.: 4-4-0.

20-263-481. Design of Mechanical Elements. Modern design procedures as applied to the design of machine components. Prereq.: 20-263-360; 20-257-391. Sum. & Aut.: 4-4-0.

20-263-485. Mechanical Vibrations I. Vibrational systems with one, two, or more degrees of freedom. Laboratory experiments involving mechanical systems and simulation. Prereq.: 20-025-272. Each Qtr.: 4-3-3.

20-263-486. Analytical Methods in Engineering I. Analytical techniques common to wide classes of problems; problem formulation and solution; linear and nonlinear systems; analog and digital computer solutions. Prereq.: 20-025-371. Sum. & Aut.: 4-3-4.

20-263-536,537,538. Special Projects. Individual work on an extended project of interest to the student. For elective credit. By special permission only. Prereq.: Senior standing. Each Qtr.: Variable credit.

20-263-551. Heat, Mass, and Momentum Transfer I. Basic concepts of momentum transfer, boundary layer theory, and flow regimes; heat transfer by conduction and convection. Prereq.: 20-031-381,383,385. Sum. & Aut.: 4-3-3.

20-263-552. Heat, Mass, and Momentum Transfer II. Heat transfer with phase changes, high velocity flow, and radiation; mass transfer in stationary media and in flow. Prereq.: 20-263-551. Win.: 4-3-3.

20-263-571. Measurement and Instrumentation I. Concepts of measurement engineering; measuring systems and components; static and dynamic responses; laboratory experiments. Prereq.: Senior standing. Sum. & Aut.: 4-3-3.

20-263-585. Control Systems I. Feedback concept; control components; block diagrams and transfer functions; time and frequency domain analyses; Bode diagram and system compensation. Prereq.: 20-263-486. Sum. & Aut.: 4-3-3.

20-263-587. Engineering Design. Practice in the use of the basic tools supplied in the undergraduate curriculum, through completion of design projects. Prereq.: Senior standing. Win. & Spr.: 4-2-4.

20-263-651. Energy Conversion Systems I. Engineering applications of fluid mechanics and thermodynamics to energy conversion in reciprocating engines and turbomachinery. Coreq.: 20-263-451. Win.: 3-3-0.

20-263-652. Energy Conversion Systems II. Continuation of 651. Prereq.: 20-263-651. Spr.: 3-3-0.

20-263-671. Engineering Thermodynamics II. Statistical thermodynamics. Prereq.: 20-031-381. Win.: 4-4-0.

20-263-673. Engineering Fluid Mechanics II. Further treatment of the fundamentals of fluid mechanics. Prereq.: 20-263-451. Win.: 4-4-0.

20-263-674. Engineering Fluid Mechanics III. Applications and design problems in fluid mechanics. Prereq.: 20-263-451. Spr.: 4-4-0.

20-263-675. Direct Energy Conversion. Thermoelectric engines, thermionic converters, magnetohydrodynamic engines, and other systems. Prereq.: Senior standing. Spr.: 4-4-0.

20-263-681. Mechanical Vibrations II. Additional studies of vibratory motion. Many degrees of freedom. Natural frequency determination. Prereq.: 20-263-485. Win.: 4-3-2.

20-263-682. Mechanical Vibrations III. Study of transients, shock, and related topics. Introduction to continuous systems. Prereq.: 20-263-681. Spr.: 4-3-2.

20-263-683. Topics in Machine Design. Theories and applications of topics such as failure, creep, fatigue, impact, states of stress, nondestructive testing and optimum design. Prereq.: 20-263-481. Spr.: 4-4-0.

20-263-684. Mechanism Synthesis. Kinematic-geometric relationships of mechanisms with applications in analysis and synthesis. Prereq.: 20-263-360. Win.: 4-4-0.

20-263-685. Control Systems II. Continuation of Control Systems I; Nyquist and root-locus methods; transient and steady state specifications; analysis and synthesis. Prereq.: 20-263-585. Win.: 4-3-3.

20-263-686. Control Systems III. Continuation of Control Systems II; methods for relating transient and frequency response; simulation; hydraulic and pneumatic systems; elements of nonlinear systems. Prereq.: 20-263-685. Spr.: 4-3-3.

20-263-687. Measurement and Instrumentation II. Continuation of Measurement and Instrumentation I; techniques and principles used in instruments; measurement of engineering variables; engineering experimentation. Prereq.: 20-263-471. Win.: 4-3-3.

20-263-688. Analytical Methods in Engineering II. Continuation of Analytical Methods I. Prereq.: 20-263-486. Spr.: 4-4-0.

Metallurgical Engineering

Professor Licht, Head of Department; Professor Westermann, Chairman of Program; Professor Hoch; Adjunct Professor Kahles; Associate Professors Elliott, Focke; Assistant Professors Tholke, ————————; Instructor Guthrie.

20-269-371. Introduction to Metallurgy. The principles involved in the winning, refining, shaping, modifying, and selection of metals and alloys. Prereq.: 20-031-373. Mr. Focke. Sum. & Aut.: 3-3-0.

20-269-373. Engineering Metallurgy. The structure, mechanical properties, characteristics, treatment and selection of metals and alloys. Prereq.: 20-031-373. Mr. Tholke. Sum. & Aut.: 3-3-0.

20-269-375. Engineering Metallurgy Laboratory. Experiments in mechanical and physical metallurgy to complement Course 20-269-373. Coreq.: 20-269-373. Mr. Tholke. Sum. & Aut.: 1-0-3.

20-269-476. Physical Metallurgy. Metallic phases, and phase diagrams; electrical, magnetic, thermal, and optical properties; elasticity, plasticity, and fracture of metals. Prereq.: 20-269-371 or 373. Mr. ————————. Win. & Spr.: 3-3-0.

20-269-477. Metal Structures. Crystallography and structure of metals and alloys; the application of X ray diffraction techniques. Prereq.: 20-031-373. Mr. Elliott. Sum. & Aut.: 3-3-0.

20-269-480. Metallurgical Techniques Laboratory. Microscopic examination of metallic structures; X ray diffraction; testing methods and their interpretation. Prereq.: 20-269-477. Win. & Spr.: 3-0-11.

20-269-485. Metallurgical Thermodynamics. Application of thermodynamic principles to metallurgy: heterogeneous equilibria, solutions, phase relations. Prereq.: 20-031-373,381. Mr. Westermann. Sum. & Aut.: 3-3-0.

20-269-486. Metallurgical Kinetics. Imperfections in crystals; diffusion in solids; recovery, recrystallization, and grain growth; age hardening; heat treatment of steel. Prereq.: 20-269-371,477. Mr. Westermann. Win. & Spr.: 3-3-0.

20-269-541,542. Senior Research Projects I, II. Independent theoretical and experimental investigation by the individual student. Prereq.: Senior standing. Mr. Focke and Staff. Win.: 3-0-9; Spr.: 3-0-12.

20-269-575. Physical Metallurgy Laboratory. Experiments in cold working, annealing, austenite decomposition, diffusion, etc. Prereq.: 20-269-476,486. Mr. Elliott. Sum. & Aut.: 2-0-6.

20-269-577. Electrometallurgy. Electrodeposition and metallic corrosion. Prereq.: 20-031-373. Mr. ————————. Sum. & Aut.: 3-3-0.

20-269-579. Electrometallurgy Laboratory. Laboratory experiments in electrodeposition and corrosion. Coreq.: 20-269-577. Mr. ————————. Sum. & Aut.: 2-0-6.

20-269-581. Extractive Metallurgy. The application of physical chemistry to the winning and refining of common and selected special metals. Prereq.: 20-269-371; 20-254-372. Mr. Focke. Sum. & Aut.: 3-3-0.

20-269-583. Metal Processing. Theoretical aspects of solidification, elasticity, and plasticity, and their application to the casting and shaping of metals. Prereq.: 20-031-373. Mr. Tholke. Sum. & Aut.: 3-3-0.

20-269-584. Metal Processing Laboratory. Experiments in metal casting, powder metallurgy, and the determination of elastic and plastic characteristics in forming operations. Prereq.: 20-269-583. Mr. Tholke. Win.: 2-0-6.

20-269-586. Properties of Solids. Free electron theory, zone theory, Pauling's Theory. Thermal behavior of metals. Intermetallic compounds. Prereq.: 20-269-477,485. Mr. Hoch. Win.: 3-3-0.

20-269-591. High Temperature Materials. Effect of high temperature on the mechanical and physical properties of metals, ceramics, and selected other nonmetallics or intermetallics. Prereq.: 20-269-371, or 373. Mr. Focke. Win.: 3-3-0.

20-269-593. Foundry Engineering. Application of scientific and engineering principles to molding materials, pouring, and solidification of metals. Prereq.: 20-269-371, or 373. Mr. Westermann. Spr.: 3-3-0.

20-269-594. Foundry Engineering Laboratory. Experiments to evaluate variables related to molding materials, molding operations, and metal casting methods. Coreq.: 20-269-593. Mr. Tholke. Spr.: 1-0-4.

20-269-596. Failure Analysis Laboratory. The analysis of metal failures to determine their causes and methods of prevention. Prereq.: 20-269-476 and 583. Mr. Westermann. Spr.: 1-0-4.

20-269-597. Metallurgical Specifications. Metals and alloy systems from the standpoint of the requirements of commercial and experimental applications. Prereq.: 20-269-371, or 373. Mr. Focke. Spr.: 3-3-0.

20-269-598. Powder Metallurgy. Production of metal powders and the pressing and sintering of powder metal compacts; the properties of powder metal compacts. Prereq.: Junior standing. Mr. Westermann. Spr.: 3-3-0.

20-269-599. Theory of Metal Removal. Basic relationships between the structures of metals, the geometry of the metal removal operation, and the rate of metal removal. Prereq.: Junior standing. Mr. Tholke. Win.: 3-3-0.

20-269-781,782. Advanced Phase Diagrams. The phase rule and its application in metallurgical phase diagram interpretation for unary, binary, ternary, and quaternary systems. Prereq.: Senior standing and permission of instructor. Mr. Elliott. Win. & Spr.: 3-3-0.

Engineering Graphics

Professor Sarver, Head of Department; Assistant Professors Gurbach, Hagedorn, Hulley; Instructors Klosterman, Sweeney, White.

20-272-171. Graphics I. Descriptive geometry—the graphic science of spatial visualization, analysis, and synthesis of three-dimensional surfaces with engineering applications. Staff. Aut.: 3-2-4.

20-272-172. Graphics II. Engineering drawing—graphical communication of three-dimensional ideas and information with emphasis on freehand orthographic and pictorial sketching. Staff. Win.: 3-1-5.

20-272-173. Graphics III. Graphical solutions and computations—graphical representation of objects, data, and physical phenomena. Solution of related engineering problems. Staff. Spr.: 3-1-5.

20-272-271. Graphics IV. Empirical equations, nomography, and graphical analysis of the Fourier Series. Prereq.: 20-272-173. Staff. Sum. & Aut.: 3-1-6.

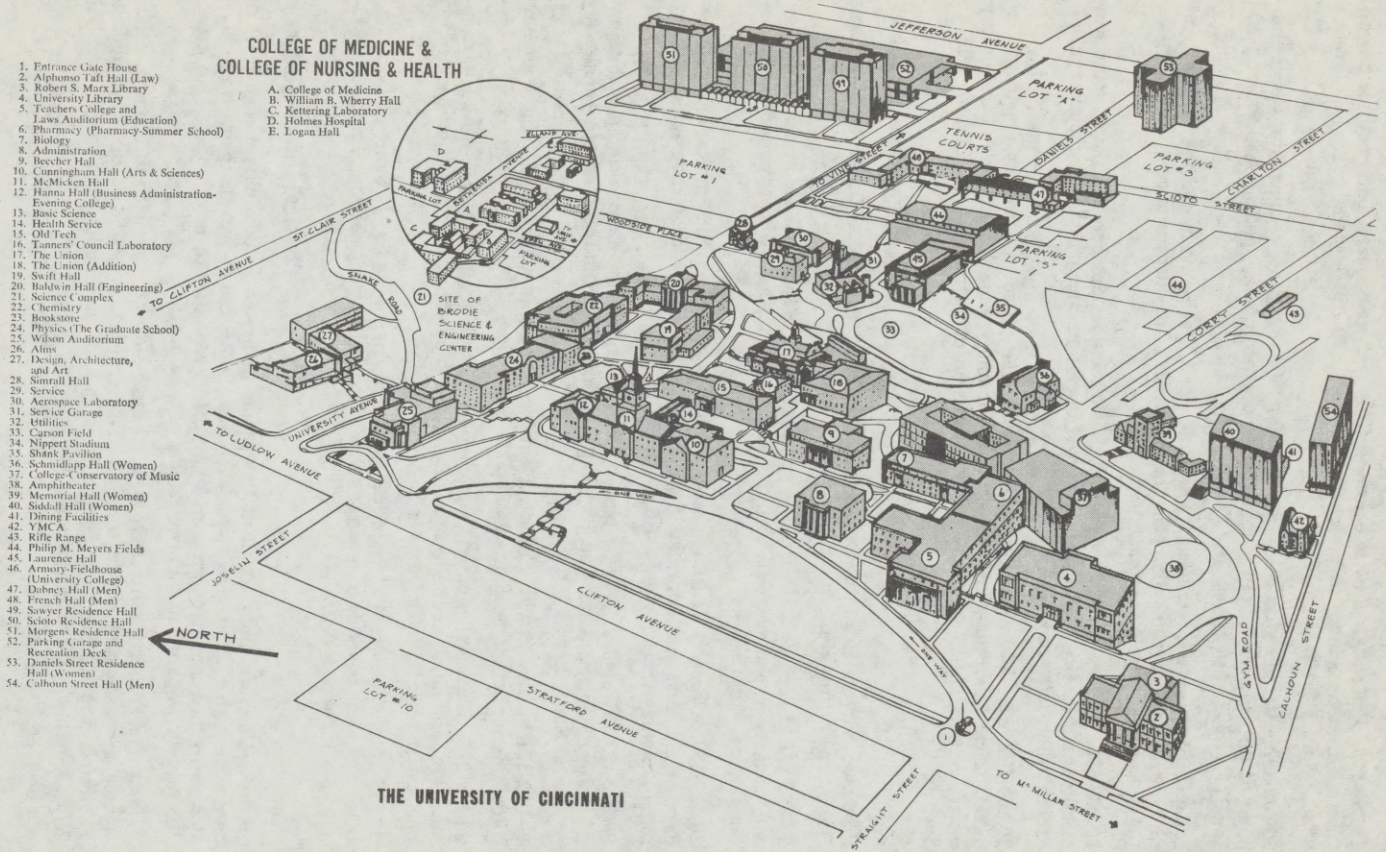
20-272-273. Digital Computer Programming. Digital computers and associated equipment. Programming and utilization of digital computers with emphasis on engineering applications. Staff. Each Qtr.: 1-0-3.

20-272-371. Graphics V. Empirical equations, nomography, Fourier analysis, and other graphical methods of greatest value in the field of engineering. Prereq.: 20-272-173. Staff. Sum. & Aut.: 3-2-2.

Physical Fitness Program

Autumn Quarter: Open to all male students interested in obtaining a high level of fitness through a series of vigorous exercises. Students will provide their own motivation as to the amount of progress to be made. Attendance is voluntary. No credit. See Athletic Department for arrangement of class hours.

Winter and Spring Quarters: Open to all male students interested in running, conditioning exercises, and weight training. This program is designed for those students interested in improving their physical strength and conditioning. No credit. See Athletic Department for arrangement of class hours.


COLLEGE OF MEDICINE &
COLLEGE OF NURSING & HEALTH
A. College of Medicine
B. William B. Wherry Hall
C. Kettering Laboratory
D. Holmes Hospital
E. Logan Hall
1. Entrance Gate House
2. Alphonso Taft Hall (Law)
3. Robert S. Marx Library
4. University Library
5. Teachers College and Laws Auditorium (Education)
6. Pharmacy (Pharmacy-Summer School)
7. Biology
8. Administration
9. Beecher Hall
10. Cunningham Hall (Arts & Sciences)
11. McMicken Hall
12. Hanna Hall (Business Administration-Evening College)
13. Basic Science
14. Health Service
15. Old Tech
16. Tanners' Council Laboratory
17. The Union
18. The Union (Addition)
19. Swift Hall
20. Baldwin Hall (Engineering)
21. Science Complex
22. Chemistry
23. Bookstore
24. Physics (The Graduate School)
25. Wilson Auditorium
26. Alms
27. Design, Architecture, and Art
28. Simrall Hall
29. Service
30. Aerospace Laboratory
31. Service Garage
32. Utilities
33. Carson Field
34. Nippert Stadium
35. Shank Pavilion
36. Schmidlapp Hall (Women)
37. College-Conservatory of Music
38. Amphitheater
39. Memorial Hall (Women)
40. Siddall Hall (Women)
41. Dining Facilities
42. YMCA
43. Rifle Range
44. Philip M. Meyers Fields
45. Laurence Hall
46. Armory-Fieldhouse (University College)
47. Dabney Hall (Men)
48. French Hall (Men)
49. Sawyer Residence Hall
50. Scioto Residence Hall
51. Morgens Residence Hall
52. Parking Garage and Recreation Deck
53. Daniels Street Residence Hall (Women)
54. Calhoun Street Hall (Men)
JEFFERSON AVENUE
PARKING LOT "A"
TENNIS COURTS
DANIELS STREET
PARKING LOT #3
CHARLTON STREET
SCIOTO STREET
PARKING LOT #1
WOODSIDE PLACE
PARKING LOT "S"
CORRY STREET
ST. CLAIR STREET
TO CLIFTON AVENUE
SHANK ROAD
SITE OF BRODIE SCIENCE & ENGINEERING CENTER
UNIVERSITY AVENUE
TO LUDLOW AVENUE
JOSELYN STREET
CLIFTON AVENUE
NORTH
PARKING LOT #10
STRATFORD AVENUE
STRAIGHT STREET
TO McMILLAN STREET
GYM ROAD
CALHOUN STREET
THE UNIVERSITY OF CINCINNATI

Where to Direct Your Inquiries

Subject	*Direct Inquiry To*
Academic Records and Transcripts	University Registrar 103 Beecher Hall Telephone 475-3931
Admission to Baccalaureate Programs	
Freshman Level	Central Admissions 120 McMicken Hall Telephone 475-2433
Advanced Standing Level	101 Baldwin Hall Telephone 475-3762
Admission to Master's & Doctoral Programs	
See Departmental Offices listing in Part 2, Page 1.	
Registration	
Baccalaureate Programs	Student Academic Services 102 Baldwin Hall Telephone 475-3645
Master's & Doctoral Programs	The Graduate School 305 Physics Building Telephone 475-4335
Student Fees	University Registrar 103 Beecher Hall Telephone 475-3931
Financial Aid — Scholarships	
Baccalaureate Programs	101 Baldwin Hall Telephone 475-3762

Mailing Address

UNIVERSITY OF CINCINNATI

Cincinnati, Ohio 45221

UNIVERSITY OF SOUTH FLORIDA,
COOPERATIVE EDUCATION PROGRAM,
Tampa, Fla., May 10, 1967.

Re: Senate Bill S. 1126.

Hon. LISTER HILL,
United States Senate,
Washington, D.C.

SIR: I have previously written your Committee in support of Cooperative Education as it fits under Senate Bill S. 1126 and any amendments which give more flexibility for strengthing of Cooperative Education Programs whereby students gain experience in their area of professional interest.

In discussing Cooperative Education with others in the field, I have come to the further conclusion that Cooperative Education would be best served if it were under a separate title than that housing the College Work-Study Program. With a separate title funded, Cooperative Education could expand rapidly into new fields and serve thousands of students. Under the Senate Bill referred to, it is my belief that unless Cooperative Education is given funds by itself, it may face some strangulation by the Work-Study segment which is predominantly a poverty program for on-campus use. While I feel the Work-Study approach is to be commended, I believe the Cooperative Education approach has even more value. It is professional in nature, it gives the student the opportunity of blending theory and practice and, in turn, serves the employer and the university as well as the student.

Further, by giving the school funds for developing Cooperative Education Programs with business and industry, the students will be paid by business and industry. Thus for the small administrative cost, a student can be placed on a professional program with the student's income, higher than what he now receives under the present CWSP, covered entirely by non-government funds. (Currently Cooperative Education students at the University of South Florida earn an average of $2.30 an hour during their training periods.) As its name implies, it is a cooperative education arrangement between student, employer, and university, and is far more than a mere work-and-study program.

To better understand terminology in the foregoing, let me define:

Work-Study—A plan whereby a student works during a term of study or alternates periods of study with periods of work. The work is mainly for financial aid and is not necessarily in line with the student's area of professional interest (his major in school).

Cooperative Education—A plan whereby a student alternates terms of study with like terms of paid on-the-job training in which the student blends theory and practice in his area of professional interest. The prime purpose of such programs is *education* but the income derived is a welcome fringe benefit.

Again, both programs fill a need but the latter (Cooperative Education) can cover more students with a greater dollar income with non-government sources paying the student, and at the same time it furthers the student's education goals.

Your consideration of separating these two programs, but supporting both will be greatly appreciated.

Very truly yours,

GEORGE H. MILLER,
Director, Cooperative Education Program.

VINCENNES UNIVERSITY,
Vincennes, Ind., August 8, 1967.

Hon. WAYNE MORSE,
Chairman, Education Subcommittee,
Senate Office Building,
Washington, D.C.

DEAR SENATOR MORSE: May I ask your support in regard to the prompt enactment of S. 1736. We believe that this bill will provide a very valuable form of educational opportunity for hundreds of young people.

We are deeply interested in initiating a cooperative education program at Vincennes University, but assistance is needed.

However, passage of this legislation would greatly facilitate the administra-

tion and operation of this program, not only at Vincennes University, but in many of the 2,200 institutions of higher education in the United States.

Would it be possible for me to testify, or present a statement, before your committee in regard to this bill?

Thank you.

Very truly yours,

ISAAC K. BECKES, *President.*

Senator MORSE. With those comments, I will recess this hearing with my very sincere thanks to all of you and each and every one of you for the cooperation you have extended to the subcommittee. The hearing is recessed, subject to the call of the Chair.

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