ECONOMICS OF MILITARY PROCUREMENT

HEARINGS

BEFORE THE

SUBCOMMITTEE ON ECONOMY IN GOVERNMENT

OF THE

JOINT ECONOMIC COMMITTEE

CONGRESS OF THE UNITED STATES

NINETIETH CONGRESS

SECOND SESSION

NOVEMBER 11, 12, 13, AND 14, 1968

PART 2

[Thursday, November 14, 1968]

Testimony of Vice Admiral H. G. Rickover, U.S. Navy

Printed for the use of the Joint Economic Committee

U.S. GOVERNMENT PRINTING OFFICE
22-490 O WASHINGTON : 1968

For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington, D.C. 20402 - Price $1.00

JOINT ECONOMIC COMMITTEE

(Created pursuant to sec. 5(a) of Public Law 304, 79th Cong.)

WILLIAM PROXMIRE, Wisconsin, *Chairman*

WRIGHT PATMAN, Texas, *Vice Chairman*

SENATE	HOUSE OF REPRESENTATIVES
JOHN SPARKMAN, Alabama	RICHARD BOLLING, Missouri
J. W. FULBRIGHT, Arkansas	HALE BOGGS, Louisiana
HERMAN E. TALMADGE, Georgia	HENRY S. REUSS, Wisconsin
STUART SYMINGTON, Missouri	MARTHA W. GRIFFITHS, Michigan
ABRAHAM RIBICOFF, Connecticut	WILLIAM S. MOORHEAD, Pennsylvania
JACOB K. JAVITS, New York	THOMAS B. CURTIS, Missouri
JACK MILLER, Iowa	WILLIAM B. WIDNALL, New Jersey
LEN B. JORDAN, Idaho	DONALD RUMSFELD, Illinois
CHARLES H. PERCY, Illinois	W. E. BROCK 3D, Tennessee

JOHN R. STARK, *Executive Director*

JAMES W. KNOWLES, *Director of Research*

ECONOMISTS

WILLIAM H. MOORE	ROBERT H. HAVEMAN	FRAZIER KELLOGG
RICHARD F. KAUFMAN	JOHN R. KARLICK	DOUGLAS C. FRECHTLING (Minority)

SUBCOMMITTEE ON ECONOMY IN GOVERNMENT

WILLIAM PROXMIRE, Wisconsin, *Chairman*

SENATE	HOUSE OF REPRESENTATIVES
JOHN SPARKMAN, Alabama	WRIGHT PATMAN, Texas
STUART SYMINGTON, Missouri	MARTHA W. GRIFFITHS, Michigan
LEN B. JORDAN, Idaho	WILLIAM S. MOORHEAD, Pennsylvania
CHARLES H. PERCY, Illinois	THOMAS B. CURTIS, Missouri
	DONALD RUMSFELD, Illinois

RICHARD F. KAUFMAN, *Economist*

[The testimony herein was presented to the Subcommittee on Economy in Government of the Joint Economic Committee by Vice Adm. Hyman G. Rickover, U.S. Navy, in executive session, Thursday, November 14, 1968, and was subsequently ordered to be printed for public distribution.]

FOREWORD AND SUMMARY

CONGRESS OF THE UNITED STATES,
SUBCOMMITTEE ON ECONOMY IN GOVERNMENT
OF THE JOINT ECONOMIC COMMITTEE,
Washington, D.C.

Approximately 25 percent of the total Federal budget is spent by the Department of Defense for military equipment. An additional enormous amount is spent for other military purposes. Many observers have in recent years pointed to instances of waste and mismanagement in defense contracting. It was the increasing concern over this that prompted the Subcommittee on Economy in Government of the Joint Economic Committee to hold hearings on profits and cost control in defense procurement.

On October 31, 1968, in announcing the hearings Senator William Proxmire, chairman of the Joint Economic Committee said:

> The need for a comprehensive investigation of military procurement has existed for some time * * * Military contracts total $44 billion a year and serious waste or inefficiency in this massive program has burdensome consequences for every American.

The subcommittee asked Admiral Rickover to testify in order to get the benefit of the knowledge he has gained in his many years of Government service. For the past 20 years, in particular, he has headed the Naval Nuclear Propulsion Program, where he is responsible for design, development, procurement, installation, and maintenance of nuclear propulsion plants for naval ships. Although his job is primarily technical, this broad responsibility has necessitated his considerable interest in procurement. As he explains, "I have had to get into the details of Government contracting in order to get my work done efficiently and on time."

Admiral Rickover is a particularly valuable witness for two reasons: first, as an official having operational responsibilities he is daily witness to the practical results of Defense Department procurement policy decisions; second, in his unique position he deals with the procurement policies of both the Defense Department and the Atomic Energy Commission.

Admiral Rickover's testimony provides a broad perspective on today's problems in defense procurement. He believes the fundamental faults in present Defense Department policies affect all aspects of procurement. To correct these faults, the Admiral urges a comprehensive overhaul of procurement policies and regulations. In summarizing the latter point, he says:

> The laws and regulations concerning defense procurement are loose and outmoded. They contain many loopholes that industry is able to exploit. Defense procurement rules need drastic overhaul and tightening.

He cites numerous examples from his own experience to illustrate each of the problems he discusses, emphasizing that these are symptomatic of fundamental deficiencies which pervade defense procurement. He argues for a comprehensive study of defense contracting by the General Accounting Office. He reiterates his conviction that the most serious defect in the procurement regulations is the lack of uniform accounting standards for defense contracts. He has been the leading proponent of uniform accounting standards for a number of years. His testimony on this subject last spring resulted in Public Law 90–370 which directed the Comptroller General of the United States to study the feasibility of uniform accounting standards. Admiral Rickover predicts that uniform standards would lead to impressive savings in time, money, and manpower.

As the second major point of his testimony, the Admiral cautions against the influence of industry on defense procurement policies. He states:

> In procurement matters the Department of Defense is too much influenced by the industry viewpoint. Procurement rules are interpreted to benefit industry rather than to protect the American public.

He explains that the industry viewpoint in the Department of Defense stems from two main sources: first, from top-level Pentagon officials who are appointed from private industry and return to industry after a relatively brief period in Government; second, from industry advisory groups working closely with Defense Department officials. He cautions that if the partnership between Government and industry becomes too close the latter may become "a fourth branch of Government * * * but without political or legal responsibility."

Since in a democracy "rights and duties are correlative," Admiral Rickover argues that, having won the rights of citizens under the law, corporations have a duty of civic responsibility. Moreover, he points out that—

> In the matter of abuse of privileges it is industry, not Government, that has the most to lose. The Government tends to obstruct the moment it interferes. If industry takes too much advantage the Government will be compelled increasingly to obstruct.
>
> The threat is to industry itself; the danger is that it will destroy its integrity and credibility and its full value to society. Industry has the choice of freedom to seek its goals without special privileges, or the enjoyment of special privileges without the freedom to act it now has.

The third main point of the Admiral's testimony is that congressional action is necessary to improve the situation. He says:

> Congress will have to take the initiative in correcting the deficiencies in defense procurement. Neither the Department of Defense, nor the Department of Commerce, nor the General Accounting Office will do it. It should not be left to a self-interested defense industry to decide what is best for the American people.

He discusses situations from his own experience in which the Defense and Commerce Departments have been unwilling to use the statutory authority given them. He states that the General Accounting Office has not placed enough emphasis on major issues—those where principles are involved. If the General Accounting Office is to

carry out its responsibility as the "conscience of Government," that office should undertake comprehensive studies and work toward fundamental improvements.

Admiral Rickover's testimony stands as one of the most comprehensive critiques of defense procurement ever presented to the Congress.

CONTENTS

ECONOMICS OF MILITARY PROCUREMENT

THURSDAY, NOVEMBER 14, 1968

CONGRESS OF THE UNITED STATES,
SUBCOMMITTEE ON ECONOMY IN GOVERNMENT
OF THE JOINT ECONOMIC COMMITTEE,
Washington, D.C.

The subcommittee met, pursuant to notice, at 9:15 a.m., in room 2311, New Senate Office Building, Hon. William Proxmire (chairman of the subcommittee) presiding.

Present: Senator Proxmire.

Witnesses: Vice Adm. H. G. Rickover, accompanied by M. C. Greer.

Also present: Richard Kaufman, economist; Douglas Frechtling, minority economist; and Howard A. Cohen, legislative counsel to Representative Rumsfeld.

Chairman PROXMIRE. The subcommittee will come to order.

Admiral Rickover, we are delighted and honored that you have come to testify before us. You are particularly welcome because you are an expert in defense matters. As you know, we are holding hearings on defense procurement. We are trying to determine what we can do to keep the cost of the Federal Government down and how we can provide an opportunity for a healthy and vigorous defense industry that will be eager to compete for contracts. We also want to be sure that the taxpayer is protected.

We are delighted and honored that you have come to testify before us, not only because you are an expert in defense matters, but because of your reputation for frankness and honesty. I realize that when testifying before Congress, you are required to support the official position of the Department of Defense. However, I understand you are permitted to give us your personal views if you are requested to do so. I am asking you to do so. We have already heard testimony from Department of Defense officials responsible for defense procurement. It is your views we want today. I hope you will feel completely free to give us your personal views regardless of what they may be and regardless of whether or not they agree with official Department of Defense positions. If the Congress is to carry out its proper legislative role, it must have all views, not just the official views of the executive department concerned.

You are particularly well qualified in an area in which it is very difficult to get answers. Defense procurement affects groups that have great political and financial influence and power, and it is most important that the Government get as full and complete and accurate a record of the elements that make up this procurement as is possible.

I believe you will be able to shed considerable light on the problems that concern us, based on 50 years of experience in the Navy and your

outstanding record as head of the very successful Naval Reactors Program, which is a joint program of the Department of Defense and the Atomic Energy Commission. I understand that you have headed that program since its inception, over 20 years ago, and that you have designed and procured the reactor plant for every nuclear warship this country has. I asked you to appear before this committee because you have held a unique position in Government from which to gain firsthand knowledge of the effectiveness of Department of Defense procurement practices.

You know what a heavy burden we have on the American taxpayer. A great deal of this burden is because of our national defense effort, and something like $44 billion of the Defense Department's budget each year goes for procurement. Many of us are concerned, and I am sure you are, about what we can do to keep the cost of defense procurement down as much as possible. This is an area in which I particularly want your personal views.

I would like to begin by asking if you have a prepared statement?

Admiral RICKOVER. No, sir; I do not. As you know, I learned about this hearing yesterday afternoon. I was not in Washington, and I did not have time to prepare a statement. However, I am familiar with the issue and I will attempt to answer your questions.

Chairman PROXMIRE. We tried to reach you, as you know. You were at sea, as I understand it.

Admiral RICKOVER. Yes, sir.

Chairman PROXMIRE. You were in a submarine and it was hard to get in touch with you because of the bad weather.

Admiral RICKOVER. Yes, sir. This past weekend I conducted sea trials out of Quincy, Mass., of our latest nuclear-powered submarine, the U.S.S. *Sunfish*. I attempted to get off the submarine by helicopter following the trials, but the seas were too high and the visibility poor. I had to remain aboard the *Sunfish* until the weather abated enough for me to leave the ship.

Chairman PROXMIRE. Under these circumstances, Admiral, I think it would be very helpful to the subcommittee, and appropriate, if you feel free to add to your testimony this morning and if you would also reply to questions that we might want to send you.

BASIS FOR TESTIMONY

Admiral RICKOVER. I will be happy to do so, sir. I am sure you are aware of my deep respect for and appreciation of our Congress. It is an honor to appear before this committee. I will try to help in any way I can.

I feel deeply my obligation, when asked, to give my views to the elected representatives of our people. The views I express are my own. I have no personal aspirations.

I can only hope that these views will be of some assistance in seeing to it that the public's business is carried out in a proper manner.

You know of my concern about defense procurement. I think the American public is entitled to have its business done prudently and economically. In my judgment our military procurement often falls short of this ideal.

Chairman PROXMIRE. The testimony of several witnesses earlier this week confirms that judgment, Admiral.

Admiral RICKOVER. Perennially, for the past several years, in testimony before various congressional committees, I have pointed out serious and fundamental deficiencies in defense procurement practices. My testimony on the policies of the Department of Defense has earned me disfavor among some of my superiors. They seem to think it is improper for a military officer to criticize their actions. They think of criticism as idle mischiefmaking designed to distract men from their tasks. Not wishing to be against openness of opinion, they cry out for "constructive" criticism, by which is commonly meant, "Admire us, don't complain."

All measures benefit by criticism, because all are capable of improvement. The modern world changes so rapidly that any formula right for yesterday is apt to be wrong for tomorrow. Adjustment to change is essential. But how to bring change to large institutions, institutions which are usually unaffected by competition, is the difficult problem. Criticism does for the large institution what competition does for the individual or for the small business.

To lay bare what is wrong is not an idle exercise in ex post facto faultfinding. Rather, it is an act of rectification. If it is not performed and accepted, faults, undiscovered and uncorrected, are bound to produce new difficulties. These may differ from the present ones, but are bound to be just as detrimental.

That is why I feel a duty to speak out when I see a fault in the system—even if the system has been designed by my superiors. I have refused to allow propaganda or ideology or a narrow loyalty to administrators to deny the evidence of my own senses as well as of the facts. I do not shade my work to appease administrators or to gladden the hearts of bureaucrats. Nor do I believe in the diversion of intellect to the justification of departmental policy.

Those who know segments of Government operations have an obligation to see that their knowledge is not lost. My particular experiences have given me a unique opportunity to assess this issue, and I have no alternative but to confront it.

Chairman PROXMIRE. In this regard, Admiral, I want to emphasize how grateful we are that you, and all the witnesses we have had at these hearings, recognize the obligation to share your expertise with this committee.

Admiral RICKOVER. Thank you, Mr. Chairman.

But I must warn you not to expect, just because testimony in these hearings shows reform to be necessary, that it will come without much additional effort, or that it will come soon. Despite my testimony over the past several years and the reports of various congressional committees, the situation remains unchanged. But at least the problem is now more precisely defined. I am disillusioned but not discouraged.

In assessing the situation that exists today, I have attempted to sort out some guiding principles, based on my own experience in Government, my deductions from observing how others in Government operate, and my analysis of history. What I say is empirical and practical, and not a search for a system of government philosophy.

If you agree, I will briefly describe some of the things that concern me. Then, if you wish, we can discuss them in more detail, sir.

Chairman PROXMIRE. Go right ahead, Admiral.

Admiral RICKOVER. I have three main points.

THREE BASIC POINTS OF TESTIMONY

First, the laws and regulations concerning defense procurement are toothless, loose, and outmoded. They contain many loopholes that industry is able to exploit. Defense procurement rules need drastic overhaul and tightening.

Second, in procurement matters, the Department of Defense is too much influenced by the industry viewpoint. Procurement rules are interpreted to benefit industry rather than to protect the American public.

Third, Congress will have to take the initiative in correcting deficiencies in defense procurement. Neither the Department of Defense, the Department of Commerce, nor the General Accounting Office will do it. It should not be left to a self-interested defense industry to decide what is the best for the American people.

EXAMPLES SHOW DEFECTS IN PRESENT PROCUREMENT RULES

Let me give you some specific examples to show how defense procurement is being conducted under present procurement rules. Specific examples are frequently an extremely useful tool to cut through generalities.

Recently, a Department of Defense official refused to approve one of my contracts—a $50 million contract—because he thought the contractor should get a higher profit than the latter had previously agreed to accept.

Another Department of Defense procurement official told me I had no business negotiating a profit lower than that suggested by Department of Defense procurement regulations.

In still another case, I found that one supplier was charging the Government $8 an hour for design work while he charged commercial customers only $6 an hour for the same work. The Department of Defense decided that this procedure was proper under "generally accepted accounting principles." At my request the General Accounting Office looked into this contract and concluded that the Department of Defense had been overcharged $5 million.

Another case: For several years the Navy paid more than the Atomic Energy Commission for the same work at two Atomic Energy Commission-owned laboratories. I first pointed this out in 1964, but the Department of Defense did not correct the situation until 4 years later. During these 4 years the extra cost to the taxpayer was $1.5 million.

Another case: I found a major defense contractor not complying with the requirements of the Truth-in-Negotiations Act 6 years after its enactment. During those 6 years he had received about $1.2 billion in defense contracts.

Another case: Department of Defense procurement regulations do not have accounting principles for fixed-price-type contracts even though three-fourths of defense procurements are in this category.

Another case: Department of Defense officials claim they have "no evidence of excessive profits," yet they have no knowledge of the profits being made on more than 50 percent of their contracts.

Chairman PROXMIRE. This is shocking; this is really shocking.

Admiral RICKOVER. What is so shocking about it, sir? It has been going on for many years.

Chairman PROXMIRE. I didn't know it had been going on for many years. I say it is shocking to me that people in the Department of Defense, whose responsibility it is to keep costs down, are acting this way.

Admiral RICKOVER. It is a sad fact that there is no sustained, serious, informal, specific criticism of the Defense Department by those in the Department itself. Instead of checks and balances, there are checks and imbalances.

There is a tendency for anyone who is in power to keep his own mistakes secret, and thus exempt himself from criticism. But there is no greater recipe for disaster than a persistent refusal to face unwelcome facts, to believe that what you are doing needs no improvement.

HIGHER PRICES IMPAIR NATIONAL DEFENSE

Last May I testified that uniform accounting standards alone could save as much as $2 billion a year on defense procurement. However, if all defense procurement regulations were properly tightened up, my estimate of $2 billion would be low. More than $2 billion could be saved if the laws and regulations governing defense procurement were given a thorough overhaul. Compare this to $800 million, the total amount appropriated for Navy shipbuilding in the Appropriations Act for fiscal year 1969, and you can appreciate the importance of this issue.

We are not able to buy all the equipment we need. Paying more than we should prevents us from having many items we need to defend our Nation.

Chairman PROXMIRE. So this has an adverse effect on our defense as well as on the taxpayer's pocketbook. It means we don't get the ships we need.

Admiral RICKOVER. Yes, sir. That is an important point. Beyond any ethical or political considerations, excessive prices militate against the defense of the United States.

SUMMARY OF PREVIOUS TESTIMONY

Let me briefly summarize some of the major points I have made in my testimony to Congress over the past several years:

Point 1. The lack of a uniform standard of accounting is the most serious deficiency in Government procurement today. Without such a uniform standard, it is virtually impossible to discover what it costs to manufacture defense equipment and what profit industry makes in producing it—unless months are spent reconstructing suppliers' books. Without such a standard, the Truth-in-Negotiations Act and the Renegotiation Act cannot protect the public against excessive profit on defense work because contractors are able to allocate costs to Government contracts in almost any manner they choose. Defense contractors should be required by law to keep their books in a way that will provide meaningful information on their costs, and to base their proposals for contracts on an accounting system that meets Government standards.

Point 2. The Department of Defense in the past few years has taken it upon itself to increase profits on negotiated defense contracts by an average of 25 percent. Industry and the Defense Department claim

that profits are too low; in my judgment, they may be too high. The profit levels on defense contracts should be reviewed to determine whether or not they are higher than they should be and whether the Government derives any benefit from these higher profits. In my opinion, the Government does not.

Point 3. The Department of Defense profit guidelines should take into consideration the extent of contractor investment in plant, facilities, and skilled personnel needed to perform the work. Under the Department's weighted guidelines method of profit analysis, profits are based primarily on estimated costs so that contractors who have little invested in Government work get the same profit as contractors with a substantial investment in such work.

Point 4. Defense contractors should be required by law to provide a certified report of costs and profit upon completion of each contract over $100,000 so the Government can tell what it costs to manufacture the equipment and how much profit industry made producing it. Criminal penalties should be provided for false or misleading reports.

Point 5. The Armed Services Procurement Regulation has become a device to protect industry rather than an aid to help Government contracting officers charged with protecting the Government in the procurement of military supplies and equipment. The Regulation should be revised to make clear that its profit provisions are intended to be upper limits for Government contracts and to encourage contracting officers to obtain the most favorable terms for the Government.

Point 6. All defense contracts should require prior Government security clearance of all advertising so that technical information regarding this country's military capabilities will not be given away to potential enemies. Further, the Armed Services Procurement Regulation should be modified to prohibit reimbursement of advertising costs on any negotiated contract.

Point 7. Uniform patent rules for all Federal agencies should be established by law. These rules should require that the rights and title to inventions financed by public funds be retained by the Government for the American people whose taxes have paid for them.

Point 8. Current Department of Defense policies regarding use of Government-owned machine tools tend to perpetuate their retention and use at contractor plants. Decisions involving use of Government-owned machine tools on subsequent contracts should be subject to the same reviews as decisions to provide machine tools in the first place.

Point 9. The Government should adopt a uniform policy on how much home office general and administrative expenses should be paid for work at Government-owned, contractor-operated plants.

Point 10. Department of Defense procurement procedures should be strengthened to insure prompt closeout of contracts following completion of work in order to protect the public against large, after-the-fact, contractor claims.

Point 11. The Department of Defense is too much influenced by an industry viewpoint, particularly in Government contracting where the opposite should be the practice. Therefore, Congress will have to take the initiative to correct the deficiences in defense procurement; the Department of Defense will not act of its own accord.

What I am suggesting is that Congress should reexamine its rights and duties under the Constitution, and not let them lapse. Congress is not merely an advisory body. It is the agent of the people. There is no one else to look after their interest. Good intentions will not protect people; laws are needed, not wishes.

All bureaucracies have the tendency to distort the record to show themselves to good advantage. Facts are as vulnerable to manipulation as any other form of power. Bureaucracies ceaselessly strive toward the state of pure nonaccountability, but it is not the purpose of the American Government to insure the comfort of our appointed officials. Nor must the servants of the Pentagon become our masters. Some of those in the directing stratum appear to believe that beautiful phrases will rescue them from vicious facts. Statistics can be used to confuse and oversimplify. When the reader—or the writer—does not know what they mean, the result is semantic nonsense.

For example, Defense Department officials have issued glowing public statements on economy and cost reduction. You will find many Potemkin demonstrations in the Pentagon—as elsewhere—of people trying to convince you of the perfection of their standards, their qualities, their accomplishments. The practice of the Department of Defense has been to boast so loudly at the slightest accomplishment that the sheer decibel count gives the satisfying illusion that a revolution is going on. They claim to have "saved" so much money in the past few years that were this true, we would need to build several large repositories to house the "savings." But from what I have seen their actions contradict their statements.

GOVERNMENT HAS TWO MAILING LISTS

I have come to the conclusion that there must be two separate mailing lists for distributing instructions to Government personnel. On one list, you get instructions to be economical; don't waste Government funds; the President urges you to cut down costs, and so forth. On the other list, you get instructions to pay higher profits; spend more money than you need to; look out for industry because industry is not capable of looking out for itself. My problem is, I am on both mailing lists.

Chairman PROXMIRE. When you say mailing lists, are you talking about specific letters that you get? Specific instructions?

Admiral RICKOVER. Yes, sir. There are specific directives. Being a simple person with a single track mind, I am confused because I don't know whether to comply with what the President and the Congress say about being economical or to carry out the orders of some of my superiors to spend more than I need to. Maybe I need some psychiatric help to understand it, or maybe they need some. [Laughter.]

Chairman PROXMIRE. Admiral, I would like to go into the subject of profits on defense contracts.

Last April, before the House Banking and Currency Committee and again on May 1 before the House Appropriations Committee, you testified that profits on defense contracts have increased by about 25 percent over the past several years.

I quote you: "Far from being too low as claimed by the Department of Defense and industry, they may be too high."

Why do you suspect that they may be too high?

Admiral RICKOVER. Mr. Chairman, you should understand that today there is no way of knowing whether defense contractor profits are too high or too low.

First, the Department of Defense does not get reports of costs and profits under firm fixed price contracts. These contracts account for over half the total Department of Defense procurement.

Second, there are no uniform standards of accounting for costs under defense contracts. As a result, you cannot tell how much profit industry really makes, even when contractors report costs and profits.

In the absence of comprehensive, factual information on profits realized on defense contracts you are forced to develop your own conclusions based on available information. I will tell you why I think defense profits may be too high.

PRICES OF MILITARY EQUIPMENT RISING STEEPLY

For one thing, prices of military equipment have escalated in the past several years much faster than the Bureau of Labor Statistics indexes for items in the civilian economy. The Bureau of Labor Statistics Wholesale Price Index for manufactured goods shows an increase of only about 1.5 percent a year since 1959.

Chairman PROXMIRE. Department of Labor showed 1.5 percent a year?

Admiral RICKOVER. Yes, sir; 1.5 percent per year or about 15 percent since 1959. However, prices for military equipment have gone up 30, 40, 50 percent and more.

Chairman PROXMIRE. Over what period did this 30-, 40-, 50-percent increase occur?

Admiral RICKOVER. In some cases, it has occurred just in the last 2 or 3 years. For example, the price for the propulsion turbines and gears for the nuclear-powered aircraft carrier *Nimitz* was about twice as high as the propulsion turbines and gears for the *Enterprise* although the equipment is nearly identical. That is an increase of nearly 100 percent in 8 years.

Chairman PROXMIRE. How much did the price of the equipment increase?

Admiral RICKOVER. The price increased from $5.5 to $10 million, sir.

Chairman PROXMIRE. To what do you attribute the higher price?

REASONS FOR INCREASE IN PRICES

Admiral RICKOVER. The intense competition for available industry capacity is one reason. In addition, average profits on defense contracts are 25 percent higher now than they were during the 1959–63 period. Labor and material escalation also contributes to the higher prices. However, I believe much of the increase stems from suppliers' ability to charge questionable costs to defense work, and from outmoded defense procurement regulations. Defense procurement rules are written on the assumption that competition is the rule rather than the exception. This results in loopholes that contractors are able to exploit at the expense of the taxpayer.

Chairman PROXMIRE. Would you please explain that, Admiral?

Admiral RICKOVER. Back in 1809 Congress passed a law requiring—

"That all purchases and contracts for supplies or services which are or may, according to law, be made by or under the direction of either the Secretary of the Treasury, the Secretary of War, or the Secretary of the Navy, shall be made either by open purchase, or by previously advertising for proposals respecting the same * * *."

Under the formally advertised procedure, the Government publicly announced what it wished to buy and everyone was given an opportunity to bid on the work. Contracts were awarded to the low bidders. In those days, military supplies were relatively simple: wagons, rifles, cannon, ammunition, food, clothing, horses. Many firms could provide these items and new suppliers could easily enter the market.

The requirement to procure by means of formal advertising was continued by subsequent legislation through the Armed Services Procurement Act of 1947, the present legal authority for defense procurement regulations. This act continues the basic rule that defense equipment should be procured by formal advertising. However, it provides, essentially, that if equipment cannot be procured through formal advertising, it may be procured by negotiation under the authority of one or more of 17 exceptions to the rule requiring formally advertised procurement. These are called negotiated procurements. Currently, only about 11 percent of defense procurement is formally advertised—all the rest is negotiated under one or more of the 17 exceptions.

In negotiated procurements competition is limited. Over half the Defense Department's negotiated procurements are sole-source. Defense equipment is much more complex today than it was even a few short years ago. The majority of defense procurement dollars go to the large corporations that can muster the scientific, engineering, production, and financial resources required to perform multimillion-dollar defense contracts for very complex equipment such as aircraft, missiles, ships, electronic equipment. Among these corporations there is little real competition. The firm that receives the first order has a substantial advantage over its competitors for subsequent orders. Further, in today's market, under the pressures of a rapidly expanding civilian economy and the Vietnam war, there is a high volume both of commercial and defense work. There is plenty of work to go around, so that industry can shop for the contracts it wants to take.

COMPETITIVE PROCEDURES FOR NONCOMPETITIVE PROCUREMENT

Despite this situation of limited competition, defense procurement regulations are primarily oriented toward competitive procurement. The problems arise when the rules and reasoning of formally advertised, competitive procurement are applied to negotiated procurements where competition is limited.

The Department of Defense has developed a concept of competitive, negotiated procurements under which it can select which firms may bid on the order and then award the contract based on the bids received, as if in a formally advertised procurement. I call this the "competitive, noncompetitive" or the "non-negotiated, negotiated" procurement procedure.

22-490 O—69—pt. 2——2

Adding up these procurements, the Department of Defense contends that more than half are competitive. Its procurement rules have been developed as if this were really the case. In fact, however, true competition in defense procurement is the exception, not the rule. I believe that steps should be taken to establish appropriate pricing safeguards.

The competitive negotiated procurement provides the simplicity of formally advertised procurements but eliminates the safeguards that protect the Government in noncompetitive procurements. In the competitive, negotiated procedure, contractors do not have to reveal their cost estimates. There are virtually no pricing safeguards; they are exempt from the Truth-in-Negotiations Act.

That is what I mean when I say that defense procurement regulations are outmoded. They try to fit the noncompetitive procurements of today into the mold of yesterday's competitive procurements. The resulting loopholes lead to higher prices. I am concerned that the Government does not receive corresponding additional value for the higher prices paid.

Chairman PROXMIRE. Would you agree with Mr. A. W. Buesking—he is a former Pentagon procurement expert now teaching at the University of Southern California. He was with the Pentagon until last August and he said yesterday, as I recall, that costs are 30 to 40 percent higher than they would be under competitive conditions, that is on defense contracts where you have negotiations with the sole source and do not have competition. Do you agree with that?

Admiral RICKOVER. His estimate is a conservative one. Does that answer your question, sir?

Chairman PROXMIRE. Yes; it does. Please go on.

Admiral RICKOVER. Every indicator I have seen shows that profits on defense contracts have increased substantially in the last few years. Companies are asking higher and higher profits. Large defense contractors are reporting record high profits to their stockholders.

Suppliers of propulsion turbines are insisting on 20- to 25-percent profit as compared with 10 percent a few years ago.

Several nuclear equipment suppliers are requesting 15 to 20 percent profit.

Profit percentages on shipbuilding contracts have doubled in the past 2 years.

One division of a large company recently priced equipment to a Navy shipbuilder at a 33-percent profit.

There are other indications of high profits. The examples I just gave are only a few I have seen in the course of my recent work.

GENERAL ACCOUNTING OFFICE CONFIRMS 25-PERCENT INCREASE IN PROFIT

As a result of my testimony in 1966, the House Appropriations Committe asked the General Accounting Office to ascertain what effect the Department of Defense weighted guidelines method of profit computation had on profit levels. The General Accounting Office confirmed what I had said. They found that negotiated profits had increased by 25 percent. Here are their findings:

NEGOTIATED PROFIT RATES ON DOD CONTRACTS

[In percent]

Type of contract	Profit on cost		Percentage increase
	1959–63	1966	
Firm fixed price	9.0	10.6	18
Fixed price incentive	8.9	9.8	10
Cost plus incentive fee	6.0	8.2	37
Cost plus fixed fee	6.2	7.6	23
Average for all types	7.7	9.7	26

DEFENSE WORK MORE PROFITABLE THAN COMMERCIAL

As you know, Dr. Murray Weidenbaum of Washington University at St. Louis conducted a study comparing profitability of defense and nondefense work. He concluded that the gap between defense and nondefense profits has indeed widened over the past decade—in favor of defense business.

His study compared six firms whose Department of Defense and National Aeronautics and Space Administration contracts were estimated to make up over three-fourths of their total sales, with six nondefense firms having a similar sales volume. Here is a summary of his findings:

COMPARISON OF DEFENSE- AND NONDEFENSE-ORIENTED CORPORATIONS

	Average of sample of defense firms		Average of sample of industrial firms	
	1952–55	1962–65	1952–55	1962–65
Profit margin on sales (percent)	3.0	2.6	4.5	4.6
Capital turnover per year	6.1×	6.8×	2.9×	2.3×
Return on net worth (percent)	18.6	17.5	13.0	10.6

Chairman PROXMIRE. Admiral, it appears obvious from what you say that this matter of profits on defense work should be of great concern to Congress. However, the Department of Defense does not agree there is any need for such concern.

DEPARTMENT OF DEFENSE ARGUMENTS UNCONVINCING

Admiral RICKOVER. Both the Department of Defense and industry contend that defense profits are low. They quote Renegotiation Board figures and a recent Department of Defense financed study made by a private research corporation, the Logistics Management Institute, to support their argument. I find their arguments unconvincing.

First, the profit figures from the Renegotiation Board are unreliable for determining overall profits on defense contracts. The annual report of the Renegotiation Board specifically cautions against use of such figures for generalizations about the profitability of defense business as a whole or even the profitability of the renegotiable sales the Board has reviewed. When you take into consideration the exemptions allowed under the Renegotiation Act, you will recognize why the Renegotiation Board makes this statement. Despite this warning, the Department of Defense continues to use Renegotiation Board figures to support its claim that there is no basis for concern that contractors are making high profits on defense contracts.

Second, the Logistics Management Institute's study of defense profits and costs, upon which the Department of Defense places great weight, was based on unverified and unaudited information volunteered by defense contractors who elected to participate in the study. Forty-two percent of the contractors who were approached provided no data. The costs and profits reported were not based on any uniform standards of accounting.

It seems to me that firms that could actually "show" a low-profit figure on defense contracts would be eager to participate in such a study because their figures would then support a case for higher profits on defense work, while firms with high profits would naturally be reluctant to furnish such information.

DIFFERENCES BETWEEN REPORTED AND ACTUAL PROFIT

Further, it has been my experience that the data reported by contractors are generally quite different from the actual data found on Government audit. Let me give you a comparison which shows the difference between profits reported by five contractors and the actual profits determined by Government audit:

COMPARISON OF REPORTED AND ACTUAL PROFITS

[In percent]

Contractor	Profit reported	Actual profit by Government audit
A	4.5	10.0
B	12.5	19.5
C	11.1	16.9
D	[1] 2.0	15.0
E	21.6	32.7

[1] Loss.

In short, the approach used by the Logistics Management Institute does not appear to provide a sound basis for determining the profitability of defense contracts.

The Department of Defense admits to a 22-percent increase in profits on defense contracts under its weighted guidelines method of profit computation, but argues that this increase is only in the negotiated or "going-in" profit. It contends that contractors generally incur higher costs than they originally estimate when pricing the order and as a result, actual, or "coming-out" profits are much less. However, I find that the only factual information the Department of Defense possesses on profits—its in-house profit review system—indicates that contractors actually do realize their "going-in" profits. I have a table which compares average *negotiated* profit and average *earned* profit on defense contracts totaling about $11 billion between July 1, 1958, and December 31, 1963, based on information in the Pentagon's in-house profit review system:

COMPARISON OF NEGOTIATED AND ACTUAL PROFITS

[In percent]

Type of contract	Average negotiated profit	Average earned profit
Firm fixed price	(1)	(1)
Fixed price redeterminable	9.3	8.6
Fixed price incentive	9.3	9.2
Cost plus incentive fee	6.4	7.2
Cost plus fixed fee	6.4	6.1

[1] Data not available.

The earned profit figures in the table are based on costs the contracting officer agreed to accept—not necessarily those shown on the contractor's books or those determined by the Government auditor. You can see from this table that on a comparable basis contractors are, for the most part, realizing their negotiated profits. And please note that the Pentagon's in-house profit review system has no information on firm fixed price contracts.

After the Department of Defense again this year claimed that defense profits are low, I did some checking. I found that in fiscal year 1967, 35 defense contractors accounted for 50 percent of the dollar value of Department of Defense procurement. These 35 contractors had, during this period, a 12-percent higher return on investment than half of the top 500 U.S. industrial firms as identified by Fortune magazine. This is one more indication that profits on defense contracts are not as low as the Department and industry would like us to believe.

The Department of Defense weighted guideline method of establishing profit was supposed to discriminate among contractors so that those who performed well or took more difficult contracts would receive higher profits than those who performed poorly or took less difficult contracts. As near as I can tell, the only result has been that the Department of Defense has increased profits paid on defense contracts by about 25 percent and, as it turned out, without regard to the nature of the contract or to contractor performance.

Chairman PROXMIRE. Yes, we had testimony on this point earlier this week that there is no correlation between performance and profits. We had testimony earlier this week that contractors are not penalized with lower profits for poor performance.

Admiral RICKOVER. That is what I have been getting at, sir. Everyone gets more profit. Like rain, it falls equally on the just and the unjust. And higher profits can substantially increase the cost of defense contracts.

People tend to think of profits on defense contracts as only that amount of profit being paid to the prime contractor. Often they fail to recognize that a large percentage of the prime contractor's costs represents profits of subcontractors. The total amount of profit paid to contractors on a defense contract is often considerably greater than the profit of the prime contractor himself, because profits may be compounded through several layers of subcontractors.

To illustrate, let me tell you what can happen in a typical situation when a shipbuilder procures a component to be installed in a ship. I will use a motor-driven pump as an example. The shipbuilder buys the motor-driven pump from a pump manufacturer; the pump manufac-

turer buys a motor for the pump from a motor manufacturer; the motor manufacturer buys certain parts for the motor from a parts supplier.

Suppose it costs the parts supplier $100 to make the parts. To this he adds 10 percent for profit. He then charges the motor manufacturer $110 for the parts.

The motor manufacturer who bought the parts builds the motor. He adds a 10 percent profit to his manufacturing costs; he also adds a 10 percent profit to the cost of the parts he bought. So, in his total price to the pump manufacturer he includes $121 for the parts—the $110 he paid the parts supplier plus $11 profit.

The pump manufacturer manufactures the pump. He adds a 10 percent profit to his cost of manufacturing the pump; he also adds a 10 percent profit to the cost he paid for the motor. In his total price, the pump manufacturer charges the shipbuilder $133 for the parts used in the pump motor—the $121 he paid in the price of the pump motor plus a $12 profit.

The shipbuilder buys the completed motor-driven pump and installs it in the ship. He charges the Government 10 percent profit on his installation costs; in addition, he charges a 10 percent profit on the cost he paid for the motor-driven pump. Thus, in his price to the Government, the shipbuilder charges $146 for the parts used in the pump motor—this includes the $133 he paid in the price of the completed motor-driven pump plus a $13 profit.

In this example, the firms involved would make the following profits on the $100 worth of parts used in the motor:

Parts supplier	$10
Motor manufacturer	11
Pump manufacturer	12
Shipbuilder	13
Total	$46

Of the $46 in total profit, only $13 would be visible to the Government as "profit"—the remaining $33 would be included in the shipbuilder's "costs."

Please note that in my example the shipbuilder makes more profit on the parts than the parts supplier. Please note also that I have not shown the profit the pump manufacturer made on the work done by the motor manufacturer nor the profit made by the shipbuilder on the completed motor-driven pump delivered to him. The shipbuilder would, in addition to the $13 profit he made on the material, also make 10 percent or more on the work performed by the motor manufacturer and the pump manufacturer. That is another issue that should be looked into—the question of how much profit a contractor should get on subcontracted work.

The point I want to make here is that when the Department of Defense increases profits 25 percent, as it did in establishing its weighted guidelines method of profit computation, the cost to the Government is increased substantially. For example, suppose each firm in the previous illustration increased its profit from 10 percent to 12.5 percent, an increase of 25 percent. Although you might think the total cost to the Government would increase by $3.25—25 percent of the shipbuilder's $13 profit—actually the total cost would increase of $14 because of the compounding of profits through the tiers of sub-

contractors. An increase in profits on other costs, such as labor, would increase the total cost to the Government in a like manner.

Frequently, defense contractors are able to pay large profits to other divisions of their own company by subcontracting portions of the work to them and then treating the profit made by other divisions as "cost" under the contract, so that these extra profits will not be visible.

For example, several years ago we were negotiating with a large, multidivisional firm—I will call it Company X—for complex equipment for which competition was limited. We were dealing with Division A of Company X. Division A indicated a 15-percent profit in its cost breakdown. However, in looking at Division A's cost breakdown for material and subcontracted work we found that much of the materials and parts were to be provided by Divisions B and C of Company X. Division A, in its bid, included the prices quoted by Divisions B and C without checking the estimates used in these quotes and without getting competitive bids from other firms. We found that Division A's material "costs" included substantial profits for Divisions B and C. Thus, although it appeared that this contract would provide a 15-percent profit, in fact, Company X would receive a much greater profit.

Chairman PROXMIRE. This indicates, Admiral, that in some cases a large prime contractor may benefit by limiting competition in awarding subcontracts.

Admiral RICKOVER. Yes, sir; especially on fixed-price contracts. There are some regulations to prevent this on cost-type contracts, Mr. Chairman, but not on fixed-price and fixed-price-incentive-type contracts which together account for over 75 percent of defense business.

Chairman PROXMIRE. And these awards sometimes go to other divisions of the large company rather than to other firms or small businesses?

Admiral RICKOVER. Yes, sir. I don't think the large corporations are as concerned about small businesses as you are, Mr. Chairman.

BUSINESS HAS RESPONSIBILITY TO THE PUBLIC

The primary purpose of a business is to make a profit. I am not against industry making a reasonable profit on Government business, nor am I interested in having the Government dictate how industry should run its affairs. Economist Milton Friedman wrote:

"Few trends could so thoroughly undermine the very foundations of our free society as the acceptance by corporate officials of a social responsibility other than to make as much money for the shareholders as possible."

But business, in the conduct of its affairs, does have a responsibility to treat the general public and the Government fairly. I think some businessmen tend to forget this responsibility in their push for higher profits. This is indicated in a report submitted by a Government official who attended a recent defense-industrial forum:

"This industry forum group made six speeches and asked questions for 3 hours. Not once did an industry representative mention customer satisfaction, quality of product, or engineering expertise. The entire thrust was corporate profit, excessive Government surveillance, and inadequate contract performance. The dinner speaker pounded

the same anvil for 47 minutes. * * * The speeches of industry representatives provided a very clear perspective of the arena in which * * * Government managers must grapple with industry."

The Government is constantly concerned about the health of industry; shouldn't business be concerned with the health of Government?

Chairman PROXMIRE. Admiral, you mentioned that the Armed Services Procurement Regulation does not require consideration of return on investment in establishing profit levels.

LOW PROFIT PERCENTAGE CAN BE MISLEADING

Admiral RICKOVER. Normally, the Department of Defense only considers profits as a percentage of cost, so a low profit *percentage* is automatically deemed a low profit. This can be misleading. For example, in the late 1950's the U.S. Tax Court upheld two Renegotiation Board determinations of excessive profits upon appeal by the contractors involved. The Tax Court determined that the amount of excessive profits was greater than even the Renegotiation Board had determined. In one case, the contractor realized profits, before taxes, of about 120 percent of its invested capital; at the time 99.6 percent of its total sales were to the Government.

In another case, a contractor had contracts with the Air Force. Figured as a percentage of the contract price, the profits on these contracts appeared reasonable—7.5 to 9 percent. But when the Tax Court investigated, they found that the contracts provided 612-percent and 802-percent profit on the contractor's investment in 2 successive years when 99 percent of his business was with the Federal Government. So, what may appear to be a nominal profit as a percentage of *cost* may be exorbitant when you consider the contractor's investment. That is why contractor investment should be an essential consideration in evaluating profitability of defense contracts.

CONTRACTORS WHO INCREASE EFFICIENCY MAY LOSE PROFIT

When competition is limited, as it is in the defense industry, the contractor who increases his efficiency may, in the long run, under the present system of determining profit as a percentage of estimated costs, actually lose profit. For example, if it costs $100 to do a job and the contractor gets a 10-percent profit, he earns $10. If he reduces the cost to $90, he will get only a $9 profit. In defense business, the higher the cost, the more profit he makes. So he has no incentive to invest in new machine tools and in other facilities which would make defense work more efficient and less costly. Thus, from the taxpayers' standpoint, the present system provides exactly the wrong incentive to contractors.

UNIFORM STANDARDS OF ACCOUNTING

Chairman PROXMIRE. Let me ask you, Admiral, you said that profits may be too high, and—you are guarded, and I think properly so—that costs may be excessive. Now, one of the difficulties is, of course, it is very, very hard to get at these costs because of the variety of ways in which they are handled.

Admiral RICKOVER. Yes, sir.

Chairman PROXMIRE. You have been the primary advocate of uniform accounting standards. Will you please give us your views on this, how practical it is, and so forth. I wish you would speak to some of the arguments that have been made by the accounting profession that this is too difficult.

Admiral RICKOVER. Mr. Chairman, it is not too difficult to establish uniform standards for accounting. I would use the very same systems which companies use internally to find out what profits they are making on their contracts. They know whether they are making money or losing it. They know it very well, but when it comes to dealing with the U.S. Government, it suddenly become an impossible task to obtain this information.

Chairman PROXMIRE. We had some very able people testify before the Banking Committee in the Senate earlier this year that there is no reason in the world why you couldn't have a uniform accounting standard. You imply that it is a matter simply of disclosure rather than a matter of providing uniform principles. Are you saying they can do this if they wanted to do it? All they have to do is use their present accounting systems.

Admiral RICKOVER. That is part of it. I believe that much of the information the Government needs could be made available with little or no change in their present accounting systems.

Chairman PROXMIRE. The General Accounting Office seems to agree with you. They say this information is available. Is this a matter of the Defense Department not going after it?

Admiral RICKOVER. The Defense Department doesn't want to go after it. The biggest problem, however, is that the information you get isn't meaningful. You have to thoroughly understand the peculiarities of the contractor's accounting system to know whether or not the information is meaningful. Further, he can change his accounting system at will. We need to establish requirements that costs be recorded in a certain manner and in a common language so that the Government and contractors can communicate meaningfully regarding costs and profits.

Chairman PROXMIRE. To get that common language, you must get common accounting principles.

Admiral RICKOVER. That is exactly the point, sir.

Chairman PROXMIRE. I was getting the impression that it was not a matter of arriving at uniform accounting standards—just a matter of going and getting the costs. You don't mean that, as I understand it. You feel that there should be principles that are agreed upon; don't you?

Admiral RICKOVER. Yes, sir. Exactly.

Chairman PROXMIRE. So there is no shifting in depreciation, shifting of R. & D., and that kind of thing?

Admiral RICKOVER. That is right.

Chairman PROXMIRE. And you can save billions of dollars?

UNIFORM ACCOUNTING STANDARDS COULD SAVE MORE THAN $2 BILLION

Admiral RICKOVER. I estimate that uniform standards of accounting could save at least 5 percent of the defense procurement budget. That means that more than $2 billion could be saved each year.

For years I have been pointing out that the biggest loophole in Government contracting is the lack of uniform standards of accounting. Such standards are essential if Government contracting is to be placed on a rational basis.

Uniform standards would help place Government contracting officers on a more equal footing with industry, and would enable them to understand the basis for the prices they have to negotiate.

The Government must have uniform standards of accounting before laws such as the Truth-in-Negotiations Act and the Renegotiation Act can be effective.

Such standards are needed so that the Department of Defense, Congress, and the public can determine what profit industry really makes on defense contracts, and what defense equipment actually costs to produce. I am not talking about rules for bookkeepers or clerks. What is needed are standards from which contractor costs can be evaluated and measured. As it is now, actual profits can easily be hidden by the way overhead is charged, how component parts are priced, or how intracompany profits are handled. Companies are able to report as *cost* what is actually *profit*.

Some believe that lack of uniform standards of accounting is no impediment to sound procurement; that it is possible to determine costs readily without them. I would like to illustrate some of the problems I have encountered in trying to do Government business without uniform standards of accounting.

First, contractors can overload costs on Government contracts with consequent benefit to their commercial work.

SHIPBUILDER'S ACCOUNTING METHODS LEAD TO OVERCHARGES

A problem I ran into several years ago, which took 7 years to settle, illustrates this. We were dealing with a large shipbuilding company that was very successful in competing for merchant ships. I shall refer to him as Shipbuilder Y.

Shipbuilder Y was often the low bidder for merchant ships. Yet in bidding on naval ships, he was usually higher than other commercial shipyards for the very same type naval ship—as much as 10 to 20 percent higher. Despite his higher prices, he was able to obtain contracts to build naval ships because, at that time, factors such as geographical dispersal, distressed labor areas, and labor differential between shipyards often determined where the Navy built its ships.

This disparity kept bothering me. How could he be competitive on one type of ship, yet not be competitive on another type built at the very same yard and with the very same workmen?

So I sent two of my people to look into this anomalous situation. After a cursory review, they reported that Shipbuilder Y was charging the Navy more for its design and other work than he was charging others for the same type work on commercial contracts. For example, the Navy was being charged $8 per hour while for commercial work the charge was only $6 per hour for exactly the same type work.

They also reported that the shipyard accounting system, as approved by the Navy, was allowing the shipbuilder to make charges to overhead and to Navy work in such a manner as to result in lower costs for the commercial work. Costs such as supervisors' salaries, overtime, and premium time were being charged as direct costs on Govern-

ment contracts while similar costs on commercial contracts were being charged to overhead and allocated to all work, Government and commercial.

My people found this system of accounting had been in existence for many years and that Government auditors had accepted these costing methods because they considered that the system conformed to "generally accepted accounting principles."

I wrote to the Comptroller of the Navy giving him the facts I had found and asking him to look into the matter. His reply informed me, in essence, that I didn't know what I was talking about, that I should mind my own business and I could rest assured that his auditors were seeing to it that the Government was being treated fairly. That was tantamount to telling you, when your mother is in danger of falling off a cliff, not to warn her until she has fallen over it.

I persisted. The Comptroller finally had his auditors look into the matter. They concluded that nothing was wrong; everything conformed to "generally accepted accounting principles." The audit was an exercise in self-justification, a facade for inactivity.

A man who has bought a theory often will fight a vigorous rearguard action against the facts. If you do not argue the case as it is, and take refuge in previous decisions and in systems of your own devising, it is possible to justify almost anything.

I finally managed to get the General Accounting Office interested in this case. In 1962, they verified my charges and issued two reports. These reports showed that Shipbuilder Y's accounting practices had resulted in unjustified payments of over $5 million by the Government. Only then did the Navy begin to question these shipbuilding costs. By September 1962, the Navy took action to recover about $6.5 million in costs previously paid the shipyard under Navy contracts, primarily in areas I had questioned.

Four years later the Government finally recovered about $3 million of the $6.5 million originally disallowed, and the case is now closed. It is unlikely any money would have been recovered if I had not been able to get the General Accounting Office to take an interest in the case. I believe the Navy could have saved far more than $3 million had it faced the problem objectively, rather than defensively, when I first pointed it out.

ILLUSTRATION OF NEED FOR UNIFORM ACCOUNTING STANDARDS

Let me give you another example of how a contractor may use his accounting system so the Government cannot tell whether it is paying for only what it gets.

A leading defense contractor maintains a large product engineering group that works primarily on developing design and manufacturing improvements for its products. The company charges this group as an overhead expense to all work, both commercial and Government. In 1964 the cost of the product engineering group at just this one corporate division was about $6.3 million, a substantial sum. The cost is prorated to the company's Government and commercial work.

Government contracts with this company usually involve very little product engineering, whereas their commercial orders involve extensive work of this type. Yet, the contractor collects the entire cost of this group in one lump sum and then prorates these charges to all work,

Government and commercial, so that Government and commercial customers share the cost of this group.

As a result of my testimony in 1965, the General Accounting Office looked into this particular case. The Comptroller General advised the Secretary of the Navy that he could not determine whether the product engineering cost and expenses assigned to Government fixed-price-type contracts were reasonable. He further pointed out that the contractor's engineers sometimes charged portions of their workday directly to certain Government cost-contracts, but charged the remainder of the workday to the product cost and expenses overhead pool which was then allocated to both commercial and Government work in a ratio of the estimated production cost. Thus the Government often paid the full cost of engineering work performed on its contracts and, in addition, absorbed a share of the cost for commercial development work.

The General Accounting Office recommended that the Navy consider some other way of contracting with this company so the Navy could be assured that it bore only an equitable portion of the product engineering costs and expenses. However, the contractor would not provide the Navy a breakdown showing the proportion of the time the product engineering group worked on items that would benefit the Government in contrast to the effort spent on items that would benefit primarily commercial work. After much difficulty, the Navy obtained from the contractor a listing of the general development projects on which the product engineering group was working. The Navy then decided to accept a pro rata share of the cost of this group on Government contracts because the projects appeared to be generally applicable to Navy work.

The Navy never did find out whether the proportion of the product engineering group effort devoted to Navy-type projects was commensurate with the costs charged to its contracts.

EXPERTS DISAGREE ON "GENERALLY ACCEPTED ACCOUNTING PRINCIPLES"

Even Government accounting experts often disagree on how particular costs should be handled under "generally accepted accounting principles."

For example, I have been involved in a case concerning several multimillion dollar contracts dating back to 1958. At that time, there was no Truth-in-Negotiations Act. However, on certain procurements for nuclear propulsion components, cost breakdowns were requested so that the Navy could test the reasonableness of price levels established through negotiations.

In response to these requests for cost breakdowns, the contractor submitted figures that indicated his price included a 10-percent profit.

About 4 years later, in 1962, the General Accounting Office found that the contractor made actual profits of about 45 to 65 percent on these contracts, and that he knew, or should have known at the time he submitted his cost breakdowns, that he would realize these higher profits rather than the 10 percent he represented to the Government.

Chairman PROXMIRE. Can you tell me what firm that was?

Admiral RICKOVER. I would prefer not to identify particular firms or individuals, Mr. Chairman. I use examples in my testimony to

illustrate fundamental deficiencies in defense procurement. I only use examples from my own experience, and it would be unfair to the firms I deal with to single them out when many other companies are undoubtedly doing the same things.

As I was saying, the General Accounting Office investigated these contracts.

The General Accounting Office considered that, under the circumstances, the contractor was not entitled to these excessive profits. The Navy and the Department of Defense agreed with the General Accounting Office. In July 1962, the Navy withheld payment to the contractor of about $4 million, to recover the excess profit. In November 1964, the Navy auditor, after an extensive and thorough review, formally determined that the $4 million was not reimbursable under the Government's contracts. In January 1965, the contractor appealed the Navy auditor's decision. This appeal was ultimately turned over to the Defense Contract Audit Agency and, in February 1966, the defense auditor responsible for auditing this contract issued a preliminary decision substantiating the Navy's action in disallowing the $4 million. In June 1967, the contractor again appealed the case to Defense Contract Audit Agency headquarters.

The General Accounting Office had concluded from a review of the contractor's cost estimates that the contractor knew, or should have known, his price would provide for a profit of about 45 percent of estimated cost. The Defense Contract Audit Agency supported this position until 1968. Then they suddenly reversed their position and proposed to release the money to the contractor.

The Defense Contract Audit Agency, using the same facts that the General Accounting Office used, but a different method of assigning costs, arrived at a different conclusion. The Defense Contract Audit Agency evaluation indicated that the contractor should have expected to realize a profit of only 20 to 27 percent of cost when he submitted his cost breakdown. On that basis, they were proposing to release the money, which would give the contractor a 45-percent profit, until I got into the issue.

Currently, the Navy, the General Accounting Office, the Defense Contract Audit Agency, and the contractor are in dispute over how certain costs should be charged. Should the stated profit have been 10, 20, 27, 45, or 67 percent? In principle, I do not see any difference in misrepresenting costs and profits by a factor of 2 or by a factor of 4.

In cases such as the one I just mentioned, I cannot accept that there should be so many different profit figures, given the same set of facts. Six years after the first General Accounting Office report on these cases, the two foremost accounting groups in Government have not yet agreed on how the costs should be treated. Each believes its method to be correct.

When a corporation submits a price or cost breakdown to the Government, I believe the corporation and the officials involved should be held responsible for its accuracy. Since the corporation has won the rights as a citizen under law, why, then, shouldn't it and its officials have the corresponding obligations and responsibilities of a citizen? In a democracy rights and duties are correlative. It is time for corporations to begin assuming the same morality as individuals rather than an independent, nonhuman outlook. It is one of the glories of

Anglo-Saxon jurisprudence that every official is responsible for his acts. It was not the corporation but its officials that gave the Government this information. However, it appears that they may now be excused for their actions.

In the matter of abuse of privileges, it is industry, not Government, that has the most to lose. The Government tends to obstruct the moment it interferes. If industry takes too much advantage the Government will be compelled increasingly to obstruct.

The threat is to industry itself; the danger is that it will destroy its integrity and credibility and its full value to society. Industry has the choice of freedom to seek its goals without special privileges, or the enjoyment of special privileges without the freedom to act it now has. This is not to suggest that the freedom of a corporation in its capacity of "citizen" should be less than that of a human citizen. It is, however, to make a distinction between the role of corporation officials as individuals and that of the corporation whose servants they are.

GENERAL ACCOUNTING OFFICE REPORTS SHOW DISAGREEMENT

Other General Accounting Office reports indicate some of the problems encountered under the Armed Services Procurement Regulation cost principles. In one case, the General Accounting Office reviewed the cost of bidding and related technical efforts charged to Department of Defense and National Aeronautics and Space Administration contracts. Let me read some excerpts from the General Accounting Office report:

"Paragraph 15–205.3 of Armed Services Procurement Regulation defines the bidding costs * * *. However, if the contractor's established practice is to treat bidding costs by some other method (than defined in ASPR 15–205.3), the results obtained may be accepted only if found to be *reasonable* and *equitable*."

"Although the cognizant (Government) auditor has questioned a significant portion of the bidding and related costs claimed * * * in recent years, the Government negotiator has allowed virtually all such costs."

"DOD has not provided auditing and contracting officials with specific guidelines for implementing the *bidding cost* provision, and these officials, as well as contractors, must interpret the 'bidding cost' provision only by the general terms of the 'reasonableness' provision (of ASPR)."

In another case, the General Accounting Office reviewed selected overhead costs charged to Government contracts. Let me read some statements from that report:

"The Armed Services Procurement Regulation generally requires that allowable indirect costs in cost-reimbursable-type contracts be reasonable * * *."

"The ASPR offers no specific guidelines covering the allocation of plant maintenance and occupancy costs."

"The allocation of building maintenance and occupancy costs on the one-roof basis is only one of several acceptable accounting practices. In our opinion, however, this method is not acceptable when it results in costs being assigned to operations to which they are not applicable and, particularly, where an alternative method would produce a more equitable cost distribution."

In another case, the General Accounting Office also reviewed reimbursement of certain overhead costs under cost-type contracts. The following are excerpts from the contractor's reply to this report:

"The report states that (the contractor) was improperly reimbursed for certain overhead costs incurred during 1959 and 1960 in the amount of $95,000. The report considers that these costs were not allowable under the applicable cost principles in the Armed Services Procurement Regulation. Specifically, the report holds that the Air Force should not have approved the payment of $36,000 of administrative costs related to the contractor's advertising department, $48,000 of administrative costs associated with the contractor's participation in certain exhibitions, and $11,000 of costs associated with the financing of the contractor's operations."

"We believe that your findings and conclusions as set forth above are not correct. You imply or state that the costs in question were unallowable under the applicable ASPR cost principles. The fact of the matter is that the applicable ASPR provisions were silent as to the specific allowability of these costs and hence were subject to consideration under the general ASPR principles of reasonableness and allocability. This being the case, the treatment of these costs were a matter of judgment for the duly authorized Government official; namely, the administrative contracting officer at the * * * plant * * *."

GENERALLY ACCEPTED ACCOUNTING PRINCIPLES CALLED "ELUSIVE AND VAGUE"

Others who have to cope with so-called "generally accepted accounting principles" are beginning to recognize the need for a uniform basis for determining costs. Recently, the Armed Services Board of Contract Appeals heard a case involving a contractor who had certain costs disallowed under Government contracts. The contracting officer did not think they were pertinent to the Government work.

The contractor, of course, defended his accounting method as being in accordance with "generally accepted accounting principles" and appealed the disallowance to the Armed Services Board of Contract Appeals—the Board that settles contract disputes between the Department of Defense and its contractors.

The Board found that generally accepted accounting principles were of little assistance in settling this dispute. Expert accountants gave conflicting testimony. It finally agreed with one of the experts and ruled in favor of the Government. The Board stated in its formal decision:

"Except insofar as the ASPR (Armed Services Procurement Regulation) cost principles themselves reflect generally accepted accounting principles, it is difficult for the Board or the parties to cost contracts to govern their determinations by *such an elusive and vague body of principles* (italic supplied). Yet, accountants apparently persist in talking in terms of generally accepted accounting principles, concepts, standards, or practices. (See Acountants' Handbook, Wixon, 4th edition, 1.13.) In the absence of specific contractual or ASPR coverage, we shall often have to rely on expert opinion evidence from the accounting profession to resolve issues as to what is or is not to be considered acceptable in a given case. In this case, we have no dearth of

accounting opinions. While the witnesses for both parties who furnished the opinions were highly qualified, their opinions were equally conflicting."

Widely differing opinions are commonplace in accounting for work under defense contracts. I had a situation several years ago where Navy and General Accounting Office auditors conducted extensive audits over a period of about 1 year to determine one supplier's actual cost in making equipment for the Government. Altogether there were seven reports containing 11 differing estimates or evaluations of supplier's costs, not counting the estimates made by the supplier himself. These various reports showed estimates of the supplier's costs differing by as much as 50 percent. Thus, while accountants may tell you they have no real problem determining costs, getting accountants to agree on costs in a specific situation is quite difficult.

GENERALLY ACCEPTED ACCOUNTING PRINCIPLES CALLED "MEANINGLESS"

An editorial from the October 15, 1966, edition of Forbes magazine illustrates the problem:

[From Forbes magazine, Oct. 15, 1966]

UNACCOUNTABLE CPA's

"Unaccountable CPA's—It's past time certified public accountants were called to account for practices that are so loose that they can be used to conceal rather than reveal a company's true financial picture. The owners of public companies and the analysts who recommend purchase or sale of their securities used to think they could rely on the honesty of financial statements certified by a reputable outside auditing firm. But in some very spectacular situations, it has turned out that such certification was not of the value or meaning or importance that the public thought. All these certifications usually bear the phrase: 'According to generally accepted accounting principles,' as a phrase which is now coming to be generally accepted as damned meaningless. When the Westec situation hit the fan, it developed that the Ernst & Ernst certification was so 'liberal' as to warrant a less flattering description. Then, not long ago, there was the *Yale Express* case. In Forbes' last issue, Leonard Spacek, chairman of Chicago's CPA firm of Arthur Andersen & Co., urged the establishment of an official Government 'court,' appointed by the President, with jurisdiction over not only CPA's but also Federal agencies like the Securities and Exchange Commission, Federal Power Commission, and Interstate Commerce Commission, to rule on accounting principles.

"With firm rulings from a Government group, Spacek reasons, CPA's will not be subject, as they presently are, to client pressure. Does he think the uproar over Westec's accounting practices will help bring about sweeping reform? Spacek shakes his head. 'No, not unless the public demands it, as they did of the auto companies over the safety issue.'

"We do.

"Before Government action is taken, the stock exchanges, industry groups, and CPA's themselves ought to get together to establish accounting standards that will be standard, and a method of enforcement that will be enforceable."

So you see, anyone who tries to tell you they have no trouble determining costs should be required to do some explaining.

Let me give you another example of how contractors can benefit from an inadequate accounting system. Several years ago the Navy was procuring pumps from one division of a large corporation. Since the price for these pumps was rising, the Navy asked for a Government audit to determine what the actual costs had been on prior orders.

The contractor's accounting records indicated profits between 45 and 65 percent on the prior orders. But the contractor claimed his accounting records did not show the actual cost of performing the work and that his actual costs were higher than his books showed. The Government auditor agreed that the contractor's accounting system did not accurately record incurred costs. He pointed out, however, that the contractor had repeatedly refused to modify his accounting system so that it would show actual costs incurred. Thus, there was no way to tell whether or not the equipment was overpriced.

All I am saying is that on Government contracts we should have some ground rules for costs—and use these ground rules on all contracts, not just on some of them. I am not advocating large, new expensive systems which would be a burden on small business. But I believe it is wrong to keep on awarding contracts totaling hundreds of millions of dollars to the same firms year after year, and still be unable to tell how much the equipment costs or how much profit they make. In 1967, 30 percent of all defense procurement, about $12 billion, went to just 10 large firms. Of the top 25 defense contractors, 23 were among the 100 largest defense contractors 10 years ago. Isn't it reasonable to expect that the Department of Defense should know how these firms spend the Government's money?

I consider that for any contract over $100,000, the Government ought to have a uniform set of accounting standards and ought to require the contractor to account for and report his costs in accordance with that standard. It was Lord Kelvin who said:

"When you measure what you are speaking about, and express it in numbers, you know something about it; but when you cannot measure it, when you cannot express it in numbers, your knowledge is of a meager and unsatisfactory kind."

COST PRINCIPLES NOT APPLIED TO FIXED-PRICE CONTRACTS

Chairman PROXMIRE. Admiral, I thought the Armed Services Procurement Regulation specifies cost principles for Government contracts. Would you please explain this?

Admiral RICKOVER. The Armed Services Procurement Regulation cost principles apply only to cost-reimbursement-type contracts. These cost principles deny certain costs, such as advertising expenses and bad debt expenses that have been determined as a matter of Government policy to be inappropriate for Government contracts. However, these principles do not apply to firm-fixed-price and fixed-price-incentive-type contracts, which together constitute more than 75 percent of defense procurement. The Armed Services Procurement Regulation states that its cost standards are only "guides" in fixed-price contracting. Contractors interpret this to mean that all costs are allowable under fixed-price contracts. Dr. Howard Wright, in "Accounting for

Defense Contracts," states specifically: "No cost is unallowable under fixed-price contracts."

BOOK ILLUSTRATES LOOPHOLES IN REGULATION

Dr. Wright participated in the development of the present Armed Services Procurement Regulation cost principles. He was therefore well qualified to write a book which illustrated some of the loopholes in these cost principles. This is tantamount to preparing a code of ethics and then writing a book on how to beat the rules and still be assured of salvation.

Let me read some of his suggestions from a section entitled, "Ten Ways To Maximize Profits."

In "Maximizing Selected Cost Elements," he states:

"Bidding expense. If these are proportionately greater on Government work, accumulate separately and charge directly to the contracts. Do not allocate all bidding costs to all business.

"Use accelerated methods of depreciation.

"If normal repair and maintenance work cannot be done because of intensive equipment use during contract performance, be sure the contract price covers the cost (if fixed-price contract) or that an advance agreement provides for reimbursement (cost-type contract).

"Price intracompany transfers at transfer prices."

Mr. Chairman, this last point made by Dr. Wright is the profit-on-profit loophole I explained earlier. Although the procurement regulation has some rules to cover this situation, they apply only to cost-type contracts. There are no real rules to cover this situation on 75 percent of all Department of Defense contracts.

To continue:

"Identify and recover precontract and starting load costs that are disproportionate on Government work. For example, heavy recruiting and training costs and abnormal costs of defective work should be 'direct costed.' "

In "Review Unallowable Costs," he states:

"No cost is unallowable on fixed-price contracts.

"For cost-type contracts determine if alternate treatment of item may permit it to be allowable. For example, some entertainment costs might more accurately be classified as travel or employee morale expense."

In "Make Decisions in Light of Section XV, Armed Services Procurement Regulation." he states:

"Contributions to educational institutions are unallowable. However, if the purpose of the contribution is to underwrite losses incurred by the institution in offering courses to the contractor's employees, a lump-sum contract with the institution will accomplish the same objective and will be allowable.

"Avoid stock options and deferred compensation devices. Substitute higher salaries and fringe benefits that are allowable."

In "Prepare Termination Claim on Most Advantageous Basis," he states:

"Use total cost claim where preparatory and starting load costs are heavy and contract is far from complete.

"Use total claim where costs have been higher and profits lower than expected.

"Use inventory claim to protect higher than expected profits on completed portion of the contract."

In "When Preparing Termination Claim on Inventory Basis," he states:

"Include all unrecovered costs in the inventory: materials and components, work in process, unbilled finished goods, plus unrecovered starting load and preproduction costs that may not be recorded anywhere in the inventory."

I hope I have not unwittingly contributed to a run on Dr. Wright's book by Government contractors because of the "nuggets" I have quoted.

Chairman PROXMIRE. I can see why there might be.

NO REQUIREMENT FOR MEANINGFUL ACCOUNTING RECORDS

Admiral RICKOVER. I mentioned earlier that a contractor can change his accounting system at will. This is another major loophole in defense procurement regulations—the absence of definitive requirements that contractors maintain meaningful accounting records. Generally, contractors are only required to maintain an accounting system conforming to the vague standard of "generally accepted accounting principles."

The General Accounting Office has the right to examine the books and records pertaining directly to performance of any Government contract over $2,500 for a period of 3 years after completion of work. However, there is no requirement that contractors' books and records show the cost of this work. This is tantamount to having a season ticket to a theater where the curtain never rises.

The Department of Defense requires that contractors maintain books and records to show the cost of performing certain types of orders, but this requirement does not pertain to firm-fixed-price contracts—55 percent of defense procurement.

These loopholes confront the Government with an endless variety of accounting systems for allocating costs to Government work. The Government has neither the time nor the personnel for full investigation of costs.

Let me give you some examples.

SUPPLIER REFUSES TO KEEP ACCOUNTING RECORDS EVEN AT GOVERNMENT EXPENSE

I am involved in a situation with a sole source supplier of special units for naval nuclear propulsion plants. The supplier refuses to keep accounting records that show the cost of manufacturing this equipment and he will not reveal his manufacturing process. He certifies his cost estimates as required by the Truth-in-Negotiations Act. However, there are no accounting records to back up these estimates. Thus, there is no way to determine whether the prices he quotes are reasonable.

To avoid delaying ships, the Navy released part of one order on his terms and offered to pay him to collect cost information under that order so the basis for pricing future orders could be established, since requirements for these units could amount to several million dollars over the next 2 to 3 years. The contractor answered that he was busy building these units and he would let us know later on whether he could accommodate our request. The first order is now nearly complete and the supplier still has not agreed to set up adequate accounting records. As a result, we will not be able to determine a reasonable price for subsequent orders.

The Navy is pursuing this matter, but since there is no requirement that contractors maintain adequate accounting records, we have no leverage in the negotiation. I doubt we will succeed in getting this supplier to keep meaningful accounting records.

Obviously, controversy abounds when Government contracting officers and auditors are told to use the Armed Services Procurement Regulation cost principles as a "guide" for fixed-priced contracts and contractors contend that these cost principles are not applicable. This conflict accounts for much of the frustration, anxiety, and delay contractors associate with Government business. I do not know why a particular cost, such as a bad debt expense or interest expense should be allowed on one type of Government contract and disallowed on another. Hence my constant request for uniform standards.

Since there are no firm standards for costs on fixed-price contracts under present defense procurement regulations, each Government contracting officer, in effect, determines Government policy with regard to what costs should be reimbursed. They make this determination on a case-by-case basis simply because the Department of Defense is unwilling to make the decision. As a result, one contracting officer might, under a fixed-price contract, allow a cost that would be specifically disallowed under a cost-type contract. Another contracting officer might take the opposite position. Decisions regarding what costs to recognize under fixed-price-type contracts are influenced more by the relative bargaining positions of the parties than by equity. Large contractors are bound to have an advantage over smaller contractors in such situations.

I believe steps can and should be taken *now* to close this loophole.

First, the Department of Defense should immediately make the cost principles in Armed Services Procurement Regulation Section XV mandatory for all types of contracts. This would provide a basis for measuring costs until the General Accounting Office completes its study of uniform accounting standards. Application of Section XV to all contracts would be just a start, however, since other standards are needed in such areas as assigning costs to Government work.

Second, defense contractors should be required to report, upon completion of each order over $100,000, the actual costs incurred and the actual profit realized on the order. Until a uniform standard of accounting can be developed, contractors should be required to calculate costs and profits in accordance with existing principles in Section XV of the Armed Services Procurement Regulation. They should be required to certify these reports and to have them verified by a Government auditor or perhaps a certified public accountant.

Third, contractors should be required to keep adequate accounting records to show the cost of any contract over $100,000.

These three changes would result in an immediate and substantial improvement. Besides providing a sounder base for evaluating costs and profits, they would simplify contract pricing.

GOVERNMENT COULD RELY MORE ON PRIVATE ACCOUNTING FIRMS

With a definitive and uniform standard of accounting and with criminal penalties for improper certification, there is no reason why the Government could not rely to a greater extent on certified public accountants to verify contractor cost information. This could lead to significant savings in cost and time.

Much of the time consumed in the procurement process is not in negotiations. It is lost in the extensive factfinding process, in trying to determine supplier costs and in evaluating them based on the limited information the Government may have at hand. Once uniform standards of accounting are established; once contractors are required to maintain records and to submit a report of actual costs computed in accordance with such standards upon completion of each order; and once contractors are required to submit cost estimates and pricing proposals in accordance with such standards, defense procurement can be conducted economically and rapidly on a rational and coherent basis.

So far I have talked primarily about loopholes in Department of Defense procurement regulations. There are also serious loopholes in the laws Congress has passed to safeguard the money spent for defense procurement. Neither the Truth-in-Negotiations Act nor the Renegotiation Act effectively protects the public against excessive costs and excessive profits. As you know, the real protection in this world comes not from people's good intentions, but from laws.

Chairman PROXMIRE. Please elaborate, Admiral.

FUNDAMENTAL DEFICIENCIES IN RENEGOTIATION

Admiral RICKOVER. There are four fundamental deficiencies in the renegotiation process. First, much of the work most profitable for industry is excluded from renegotiation because of the exemptions which were included in the act as a result of the efforts by special-interest groups.

Second, the Renegotiation Board is not sufficiently staffed to do its job. It has fewer than 200 people to watch over $45 billion of defense procurement, while in 1953 it had 742 people to look after $32 billion of defense procurement.

Third, the Board has no basis for determining actual costs and profits on defense contracts. It has adopted Internal Revenue Service rules which have nothing to do with the way costs are assigned between Government and non-Government work or between contracts that are subject to renegotiation and those that are exempt. Renegotiation cannot be effective when there is no standard for measuring costs and profits on contracts. Internal Revenue Service rules are inadequate for this purpose.

Fourth, contractors are able to average out their profits and shift them from year to year to conceal excess profit in any one year.

Contractors report aggregate Government sales subject to renegotiation and aggregate costs related to these sales. The difference between these two numbers is profit for renegotiation purposes. Obviously, the

manner in which contractors allocate costs among Government and non-Government contracts determines what profit they report. Since contractors have great flexibility in accounting for costs, they have equal flexibility in reporting profits.

Let me read you an excerpt from an article that appeared in the press earlier this year. It quoted a statement by the president of one of the Nation's largest defense contractors, and it illustrates the leeway contractors have in reporting their level of profits:

"The situation in connection with * * * is somewhat different, the president said. There is no question of anticipated losses. The question is one of how much profit to book in a given year. He explained that the company had decided to slow the rate of profitbooking. He added that he wanted to make it clear that the amounts were definitely less than we believe we should—or will ultimately—earn."

As long as the contractor is able to avoid showing a high profit in any one year, he is safe from renegotiation. That does not mean he did not overcharge the Government on defense contracts.

RENEGOTIATION ACT DOES NOT PREVENT OVERPRICING

Large firms have a significant advantage in being able to average their profits. They can overcharge the Government on contracts where competition is slight in order to bid low, perhaps at a loss, to obtain other Government orders in more competitive markets. A company might make excessive profits in one division to compensate for low profits in another division. Since the Renegotiation Board deals in average profits, high profits on one order or in one division of the company can offset low profits on other orders or in other divisions.

Thus, Government may be subsidizing the entry of a large corporation into new markets at the expense of small business. The Renegotiation Board would never know, because the individual transactions are hidden in averages. The analogy is the case of the nonswimmer who thought he would be safe in a river because he had read that the average depth was only 5 feet.

Representative Gonzalez has tried to strengthen the Renegotiation Act by making it permanent legislation. He proposed to eliminate the so-called 35-percent rule. Under this loophole, any item for which 35 percent of the sales was in non-Government markets was automatically exempt from renegotiation. Representative Gonzalez also proposed including construction contracts, machine tools, durable production equipment, and sales to the Tennessee Valley Authority under the act, and lowering the level of reporting from $1 million to $250,000.

RECOMMENDATION FOR ADDITIONAL CHANGES TO THE RENEGOTIATION ACT

I agreed with these recommendations, and made additional recommendations to further tighten the Renegotiation Act. I recommended that industry be required to report cost and profits on every defense contract over $100,000 on a contract-by-contract basis, and that these costs and profits should be reported in accordance with uniform standards of accounting that would prohibit costs not appropriate to Government contracts, such as advertising, bad debts—costs of the type specified in Section XV of the Armed Services Procurement Regula-

tion. I recommend that an authorized senior company official be required to certify such reports, that criminal penalties should be provided for filing false or misleading data, and that such officials or firms not be allowed to plead nolo contendere in these cases. I also recommended that the Renegotiation Act provide for renegotiation of contracts within individual commodity groupings, such as the groupings prescribed by the Federal Supply Catalog, rather than by total company sales.

Representative Gonzalez' proposal to make the act permanent was defeated. However, the 35-percent rule for exemption of standard commercial articles was strengthened somewhat, so that an article will now qualify for exemption from renegotiation if 55 percent of its sales are in commercial markets.

Chairman PROXMIRE. Admiral, you know that we enacted the Truth-in-Negotiations Act to put Government on a more equal footing with industry in negotiating defense contracts and to protect the taxpayer against overpricing. Some Members of Congress and others have argued that with the Truth-in-Negotiations Act we don't really need the Renegotiation Act.

TRUTH-IN-NEGOTIATIONS ACT DOES NOT PREVENT OVERPRICING

Admiral RICKOVER. Congress, the General Accounting Office, and the Department of Defense place great faith in the Truth-in-Negotiations Act as a protection against overpricing. Yet, the Truth-in-Negotiations Act does not and cannot adequately protect the Government against excessive prices. There are several reasons for this.

First, the Truth-in-Negotiations Act assumes that costs and profits can be measured. Without uniform standards of accounting, this is not possible. Suppliers can inflate costs so that it becomes almost impossible to tell what costs are included in the price and what profit a contractor expects to realize on the order.

Second, contracting officers may bypass the Truth-in-Negotiations Act by determining that competition is adequate, even in negotiated procurements, where usually there is in fact little or no competition. The Truth-in-Negotiations Act does not apply when a contracting officer determines that there is adequate competition. In these cases the contracting officer does not obtain or evaluate supplier cost and pricing data in establishing the price. Nor does the contractor have to reveal the basis for his cost estimates; or certify that his price was based on current, complete, and accurate cost information. Once a procurement is judged to be competitive by the contracting officer, the Government assumes full responsibility for high profits and overcharges.

REQUIREMENTS FOR COST DATA ARE WAIVED

Third, requirements for cost data under the Truth-in-Negotiations Act can be waived. Surprisingly, such waivers are granted to many large defense contractors.

Chairman PROXMIRE. Can you give us an example or two?

Admiral RICKOVER. Yes, sir.

The requirement for cost data was waived for a procurement of propulsion turbines, although the price was substantially higher than for similar equipment on a prior order and even though the contractor

himself admitted his price included a 25-percent profit. The contractor argued that he considered his bid was based on competition; therefore, he would not provide cost data. The Government waived the Truth-in-Negotiations Act.

Manufacturers of large computers needed by Government for its research and development programs refuse to provide cost data on orders for new design computers. The entire computer industry takes this position, so the Government has waived the Truth-in-Negotiations Act. Each of these large computers costs the Government $6 to $7 million or more so the procurements are substantial; such procurements amount to over $3 billion each year.

Material suppliers such as steel mills, nickel producers, and forging suppliers usually do not provide cost data.

Chairman PROXMIRE. Why shouldn't it be made mandatory?

Admiral RICKOVER. It should be. This is what I recommend.

As you know, the requirement for cost data under the Truth-in-Negotiations Act does not apply if the contract is judged to be "competitive" or "based on standard catalog prices." Contracting officers generally prefer to judge the procurement to be "competitive" or "based on standard catalog prices" rather than suffer the delays inherent in a head-on confrontation with a large firm that is unwilling to provide cost breakdowns. It seems that the bigger the firm or industry which is unwilling to provide cost breakdowns, the more likely is it that competition will be held to be "adequate."

The determination of competition is one of judgment by the contracting officer. This judgment is difficult. It requires analysis and assessment of many complex factors. These factors are often subjective and intangible, and not susceptible to precise evaluation. Rarely do our contracting officials have the experience and judgment to understand all the factors involved. Yet the decision that competition exists, once the contract is awarded, is final and the Department of Defense does not then or thereafter review supplier books or records, so it can never know when these judgments are wrong.

By deciding that competition is "adequate" the Government contracting officer and the contractor save considerable time and effort because cost data does not have to be obtained or reviewed. Otherwise, the contracting officer must obtain cost breakdowns, have the cost estimates audited, and then negotiate with the supplier, documenting the results. Because there are no uniform standards of accounting this task is difficult, often requiring months of effort by technical personnel, by auditors, and by the contracting officer. Should a contracting officer attempt to analyze the volumes of detailed information involved and overlook some critical point, he may be accused of negligence. He also faces a difficult problem if his review of suppliers' costs indicates the price should be lower than he is able to negotiate.

In large complex procurements it is, therefore, very tempting for a contracting officer to take the easy route and determine that there is "adequate" competition.

Chairman PROXMIRE. Is this done frequently?

Admiral RICKOVER. Yes, sir, I think so. Let me give you an example to illustrate the problem.

PROCUREMENT OFFICIALS RELUCTANT TO NEGOTIATE

Earlier this year, the Navy solicited bids from two companies on a contract covering many millions of dollars. Only these two firms were capable of performing the work. The low bidder's price was significantly lower than his competitor's; however, it was still substantially more than the Government estimate based on experience for similar work. The difference in the production facilities of these two companies gave the low bidder a substantial advantage over the other firm. A comparison of the low bidder's proposal with prior contracts for similar work indicated many areas where his proposal had been unreasonably inflated.

Navy procurement officials looked at the two bids and concluded that competition was adequate. They said they were convinced that both firms wanted the contract. The procurement officials recommended accepting the low bid and awarding the contract immediately, without obtaining and reviewing the supplier's cost breakdown and without negotiating. This is the normal procedure for handling competitive bids.

I told the procurement officials I thought they were wrong. I showed them areas where it was obvious the contractor's price was substantially higher than actual experience on prior orders. I pointed out that, once accepted, this inflated bid would establish a new pricing level with resultant higher prices on subsequent orders.

I told them if they did not get the cost down to a reasonable level before they awarded the contract, the contractor would have no incentive to control his costs and run the job efficiently.

The procurement officials were still not convinced. This was the way they had been awarding contracts. They had decided that under Department of Defense procurement procedures this could be awarded as a competitive contract. They suggested that my only interest was in trying to keep the contractor from realizing enough profit.

I was finally successful in obtaining approval from higher authority for the Navy to obtain the supplier's cost estimates and negotiate the price. As a result, the base price was reduced through negotiations by about $27 million. The contract now falls within the scope of the Truth-in-Negotiations Act, so that all subcontracts placed under this prime contract are subject to the provisions of that law. This probably would not have been the case had the contract been awarded on the basis of "competition."

I believe the Truth-in-Negotiations Act is violated even more in the award of subcontracts than it is in the award of prime contracts.

Chairman PROXMIRE. We asked some of our earlier witnesses to comment on the matter of subcontracting. Apparently, there is little information available on this subject. We did ask about subcontracts, and they had some information regarding small business set-asides and things of that kind, but nothing else. Any information you can provide on subcontracts would be helpful.

SUBCONTRACTING IS THE HIDDEN PART OF THE ICEBERG

Admiral RICKOVER. Subcontracting is the hidden part of the procurement iceberg. About half the work under large defense contracts is subcontracted. From what I have observed this is an area that may be full of procurement abuses.

Chairman PROXMIRE. Yes, it is enormously important as you indicated. We want very much to get at that. Our hearings wouldn't be complete without it.

Mr. COHEN. Admiral Rickover, when these prime contractors bid for sophisticated weapons, and they have a number of subcontractors, have they already had to go to these subcontractors to get some idea of prices and capacity to perform a certain job? On the prime contract, do they delineate who will be their subcontractors?

Admiral RICKOVER. Sometimes they do, but it is not necessary that they do so. It is the Government's choice. If, for technical or other considerations, it is necessary that a certain part of the work be subcontracted to a particular firm, the contracting officer may include a contract requirement to that effect.

However, if you have a competitive contract, the contracting officer will generally not place any restrictions on subcontracting.

Chairman PROXMIRE. Suppose you don't have a competitive contract?

Admiral RICKOVER. Even then, contractors are seldom bound to a particular subcontractor by terms of the prime contract, except where necessary from a technical standpoint. The Department of Defense pays little attention to subcontracting.

I am currently involved in several large Government contracts where I have arranged to review and approve subcontracts prior to placement of the contract. Normally in the Navy—and I suspect elsewhere in the Department of Defense—it is not the practice to review these procurements on a case-by-case basis. Rather, Department of Defense personnel review and approve the contractor's purchasing system, and rely on the approved system to assure reasonable prices for the Government. With a Government-approved procurement system, the contractor is no longer required to submit subcontracts for Government approval.

The procurements I have seen indicate that Government-approved procurement systems often result in unreasonable prices for the Government.

I found that, in actual fact, nearly all procurements are treated as "competitive." Shipbuilders generally do not obtain supplier cost or pricing data from their suppliers. I have seen procurements recommended as competitive when only one supplier could physically perform the work.

CONTRACTORS FAIL TO COMPLY WITH LEGISLATION

I found that one large defense contractor had not implemented the requirements of the Truth-in-Negotiations Act *6 years* after its enactment. During that period he had received about $1.2 billion in Navy contracts.

Chairman PROXMIRE. Why couldn't we have a study made by the General Accounting Office of the enforcement of the Truth-in-Negotiations Act? Where it is being used; where it is not. They should be able to do that easily.

Admiral RICKOVER. Yes, sir, and to find out why it isn't being used.

I found that some major subcontractors have never provided the cost data required by the Truth-in-Negotiations Act. The prime contractor simply concluded that competition was adequate so he could

place the order without the delay of requesting a waiver to the Truth-in-Negotiations Act and without a major confrontation with the supplier.

Just this week I sent a letter to the Assistant Secretary of the Navy for Installations and Logistics about the Navy's ship procurement practices. I listed specific examples I had encountered.

In one case a shipbuilder received only one bid and it was substantially higher than previous prices for similar equipment. The proposed price was $311,000, about $75,000 more than the shipbuilder paid several months earlier for the same type units for another ship. The bid price was about $152,000 more than similar units bought in 1964 for the same type ship. The shipbuilder recommended this procurement as a competitive deal because he had requested the bids from several companies. Even though only one company bid, the shipbuilder did not obtain and evaluate the supplier's cost and pricing data as required by the Truth-in-Negotiations Act.

I rejected the shipbuilder's recommendation and insisted that he obtain and review supplier cost and pricing data as required by the Truth-in-Negotiations Act. As a result, the price was ultimately reduced by about $85,000 through negotiations. The final price still provided a substantial profit to the supplier.

In another case a shipbuilder requested approval for a procurement which provided for about a 33-percent profit on the supplier's estimated costs. In recommending approval of this procurement, the shipbuilder pointed out that the profit had been negotiated down from 46 percent.

I disagreed with this procurement and asked the shipbuilder to obtain a Government audit. The auditor pointed out further areas where the supplier's estimated costs were higher than could be supported by his books, so there was potential for even higher profit than we thought. The shipbuilder subsequently advised us he was unable to negotiate a lower price but that the supplier was submitting a new cost breakdown to show higher cost and lower profit, but the same price. In his recommendation the shipbuilder stated:

"In view of the competitive nature of this procurement, our evaluation of the reasonableness of the total price quoted and the urgent necessity for early placement of the order, we recommend that the contracting officer give us his consent to procure these sets from * * * at the total price of $518,488 as well as the stock components at a total price of $161,409 without waiting for the revised cost breakdown or the final audit report from DCAA. Attention is again called to the [supplier's name] position that the total price for these sets will not be reduced."

In another case, a shipbuilder recommended approval to place a $216,000, sole-source subcontract for equipment. Initially, the supplier refused to provide the cost data required by the Truth-in-Negotiations Act. I insisted that the shipbuilder obtain the cost data. Eventually, the supplier acquiesced. The cost breakdown he provided indicated a 25-percent profit on his estimated costs and, in addition, numerous unsubstantiated contingencies that could provide him a potential profit in excess of 50 percent. Nonetheless, the shipbuilder recommended this procurement at the bid price.

The overcharges I have been talking about do not seem large, individually. However, you must remember, sir, these examples are but

a small fraction of 1 percent of all procurements in this category. You can easily imagine the hundreds of millions of dollars that could be saved if the Department of Defense required its contractors to obey the Truth-in-Negotiations Act.

Chairman PROXMIRE. I am interested in seeing your letter to the Assistant Secretary. Will you provide us a copy?

Admiral RICKOVER. Mr. Chairman, I cannot release the letter without prior Navy approval.

Senator PROXMIRE. If there are any difficulties in obtaining release of this letter, I would like to be informed.

(The letter follows:)

DEPARTMENT OF THE NAVY,
NAVAL SHIP SYSTEMS COMMAND,
Washington, D.C., November 13, 1968.

Memorandum for the Assistant Secretary of the Navy (Installations and Logistics).

Subj: Need for improvements in ship procurement practices.

Encl: (1) Examples of Recent Procurements Recommended by Shipbuilders but Which Were Overpriced.

1. The rising cost of naval ship construction has been a matter of considerable concern to the Navy. I believe that a large portion of the price increase in the Navy's shipbuilding program results from poor contracting practices.

2. There is little or no real price competition for shipbuilding contracts or for complex equipment that shipbuilders buy. However, for many years, the Navy has awarded shipbuilding contracts, and shipbuilders have awarded subcontracts, on the basis of "adequate competition".

3. Early this year, Navy procurement officials recommended awarding the DLGN 36–37 ship construction contract without negotiating because they considered the competition obtained from two bidders adequate, even though NAVSHIPS technical and project personnel found numerous indications that the low bidder's price was excessive. Ultimately, NAVSHIPS obtained permission to negotiate the price. Through negotiations, the low bidder's base price was reduced by $27,000,000.

4. Enclosure (1) contains several recent examples of shipbuilder procurement that indicate the inadequacy of the Navy's present procedures for ensuring reasonable prices for the Government under shipbuilding contracts. These examples were discovered because I require specific NAVSHIPS review and approval of major subcontracts for equipment under my technical cognizance. Normally, the Navy does not review subcontracts on a case-by-case basis. Instead, the Navy approves a shipbuilder's procurement system and then relies on the approved procurement system to obtain reasonable prices for the Government. From what I have seen, this procedure has not been effective.

5. Because competition for major ship construction contracts is limited, ship prices are influenced more by historical costs than by competitive market pressures. Since shipbuilders base their quotes on subcontractor bids, they have little incentive to negotiate lower prices after they receive a contract. In the long run, higher cost bases will

generate higher profits, since profits are generally established as percentages of estimated cost.

6. I believe that the Navy should face up to the lack of true competition in the shipbuilding industry and among the suppliers of shipboard equipment. Competition in this field is the exception—not the rule.

7. I recommend that you initiate a review of shipbuilding procurement practices, placing particular emphasis on the lack of true competition available, both at the prime contract and subcontract levels and on the depth of contractor and government review being performed on these procurements. If carried out effectively, such a review should lead to improvements that could save the taxpayer many millions of dollars each year. Pending completion of this review, I recommend that you require specific Navy review and consent to all subcontracts in excess of $100,000 under cost reimbursement and incentive type contracts.

8. If I can be of further assistance, please let me know.

H. G. RICKOVER,
Deputy Commander for Nuclear Propulsion.

EXAMPLES OF RECENT PROCUREMENTS RECOMMENDED BY SHIPBUILDERS BUT WHICH WERE OVERPRICED

I. MAIN CIRCULATING SEA WATER PUMP PROCUREMENT

On May 17, 1968, Shipbuilder A requested NAVSHIPS approval to procure main circulating sea water pumps from the only bidder of seven companies solicited. The proposed price for these pumps was $311,000—about $75,000 more than Shipbuilder A paid in Feburary 1967 for similar pumps used in construction of another type ship and about $152,000 more than was paid for pumps bought in 1964 for the same type ship. Shipbuilder A recommended the $311,000 price as reasonable based on increased technical requirements and known price escalation. He did not obtain and evaluate the suppliers' cost and pricing data as required by Public Law 87–653.

NAVSHIPS disapproved the proposed subcontract and asked Shipbuilder A to obtain and evaluate the supplier's cost data to insure that the price was reasonable. This data showed that the price of $311,000 would provide the pump supplier a $43,000 profit on direct labor costs of $4,707, subcontracts and materials totaling $213,387, and other costs. including sales expense, G&A and interest, totaling $50,694. Based on the suppliers' cost data, Shipbuilder A negotiated a price of $228,000 which was about the same price paid for similar pumps purchased eighteen months earlier. The negotiated reduction of about $85,000 consisted of a reduction in price, including profit, of about $45,000 and a reduction of about $40,000 in resolution of technical requirements. However, the reduced price still provided the pump supplier a profit of about 10% on his total costs and about 45% on his "in-house" costs. Without special review by NAVSHIPS, Shipbuilder A would have placed this order as a competitive deal and the cost to the Government would have been $85,000, or about 35% higher.

II. MOTOR GENERATOR SET AND VOLTAGE REGULATOR PROCUREMENT

On 14 August 1968, Shipbuilder A requested NAVSHIPS approval to place a firm price contract for motor generator sets and voltage

regulators at a price of $513,488, including $122,500 for the voltage regulators. The supplier's cost breakdown indicated that the price of $122,500 for voltage regulators included a 33% profit on cost—a profit two to three times higher than would normally be paid under ASPR guidelines. In their submission to NAVSHIPS, Shipbuilder A stated this profit was considered reasonable since the items were "high risk" and the profit had been negotiated downward from 46%.

NAVSHIPS disapproved the proposed procurement. Shipbuilder A was requested to initiate an audit of the supplier's cost breakdown and negotiate a more reasonable price. Shipbuilder A subsequently advised NAVSHIPS that the preliminary audit report indicated questions relative to labor and material man hours. However, Shipbuilder A recommended placement at the price originally offered by the supplier since the supplier had indicated his total price was final and not subject to further negotiation. With respect to the high profits, Shipbuilder A indicated that the supplier was submitting a new cost breakdown to show higher costs, lower profit and the same price. On this basis, Shipbuilder A stated:

> "In view of the competitive nature of this procurement, our evaluation of the reasonableness of the total price quoted and the urgent necessity for early placement of the order, we recommend that the Contracting Officer give us his consent to procure these sets from * * * at the total price of $518,488 as well as the stock components at a total price of $161,409, without waiting for the revised cost breakdown or the final audit report from DCAA. Attention is again called to the (supplier's name) position that the total price for these sets will not be reduced.

This procurement is still pending.

III. MAIN SEA WATER PUMP PROCUREMENT

Shipbuilder B recommended that NAVSHIPS consent to a $216,000 subcontract for main sea water pumps for which there was only one source.

Initially, the supplier refused to provide the cost data required by Public Law 87–653. NAVSHIPS insisted that Shipbuilder B obtain the required cost data. The supplier finally acquiesced. A Government audit of the supplier's cost breakdown showed the following:

1. A 25% profit on his estimated costs.
2. His cost estimate included $34,000 of other costs the Government auditor considered questionable. He had added a 20% factor to material costs, factory labor, and factory overhead costs to provide an allowance for possible defective work. A 10% factor was then added to each cost element for possible cost increases during the two-year period of contract performance. A 20% factor was then applied to the total cost less general and administrative expenses to compensate for the risks of Government inspection. The Government auditor could not obtain data to support these mark-up factors.
3. The price included a $68,000 subcontract with another division of Shipbuilder B's parent corporation. This firm declined to furnish cost and pricing data to the pump supplier, the shipbuilder or the Government because the procurement was less than $100,000. Although this procurement was less than $100,000, the Navy's

aggregate procurement of such motors from this firm, either directly or as a lower tier supplier, constitutes a very large sum since this firm is the Navy's leading supplier of quiet pump motors.

Shipbuilder B has been told to continue negotiations in order to obtain a more reasonable price and to obtain and provide data necessary to justify the reasonableness of the price. This procurement is still pending.

Admiral RICKOVER. You must further understand that the Truth-in-Negotiations Act does not insure reasonable prices in noncompetitive situations. This was illustrated by a large machinery procurement in which I was recently involved. Originally, there were two suppliers of this type machinery. Both competed for a $5.4 million lead order. The unsuccessful bidder withdrew from the business. When I went to procure a second set of machinery from the remaining supplier, he increased the price from $5.4 to $8.4 million. When the Navy tried to negotiate a more favorable contract, he raised his price to about $9 million.

I thought he would have trouble certifying cost data to support his price as required by the Truth-in-Negotiations Act, since his cost estimates were obviously inflated. He had no difficulty at all. Whatever numbers the contractor could not support, he carefully labeled as his "best judgment" so that he could not subsequently be accused of misrepresenting any facts. The Government had to accept his price since he was the sole-source supplier. This contractor will not have to worry about any future price adjustment under the Truth-in-Negotiations Act. He protected himself well. Nonetheless, I believe that the contract was overpriced.

CONTRACTORS SAY "TAKE IT OR LEAVE IT"

Chairman PROXMIRE. Do companies often give you "take it or leave it" propositions with regard to cost?

Admiral RICKOVER. Yes, sir; but often in a subtle manner.

They include unwarranted contingencies in their estimates and defend them as real costs that simply do not show up on accounting records for previous orders. Then they refuse to negotiate these "costs."

Sometimes, contractors submit a "courtesy bid." A courtesy bid is a bid so high as to insure that the contractor will not get the order. It is a more graceful way to tell the Government that he is unwilling to perform a particular order.

As in the case of the Renegotiation Act, the establishment of uniform standards of accounting would go far to make the Truth-in-Negotiations Act more effective. It should be strengthened to prohibit its being waived for contractors who do large amounts of negotiated defense work, say $1 million or more annually. I also recommend that the Truth-in-Negotiations Act be revised to require that Government agencies obtain, and that contractors provide, detailed cost and pricing data on all procurements that cannot be awarded based on advertised competitive bid procedures.

GOVERNMENT SUBJECTED TO VOLUMINOUS CLAIMS

The Government's procurement problems do not stop when a contract is awarded. Contractors often submit claims for additional

remuneration for extra work they allegedly performed beyond the requirements of the contract. Some contractors retain law firms that specialize in presenting these claims and who become very proficient in finding loopholes in contracts. I am sure you know that such law firms are endemic in Washington.

Some have large staffs that begin preparing and documenting claims the day the company starts work on a contract so that at time of contract completion, the claim can quickly be submitted with voluminous backup.

Usually, backup information for claims is quite detailed and the legal arguments extensive. The actual costs of performing the contract, however, are seldom supported by the accounting records. The contractor explains that his accounting system does not separately identify the cost of changes or of extra work. Therefore, he prepares a so-called independent estimate which is usually inflated to give him room to negotiate an overall settlement that will be satisfactory to him. The contractor then submits the claim and waits.

On the Government side, the claim arrives in the midst of other more urgent problems involving day-to-day operations. The Government is not adequately staffed, as is the contractor, to undertake the research and fight these claims. Please bear in mind that frequently the work of preparing claims and fighting the Government is charged to the contractor's overhead costs—which the Government pays. The Government people devote as much time to evaluating the claim as they can afford without jeopardizing other urgent Government business.

Usually, the effort concentrates on whether the legal arguments have merit. Once the Government concedes partial liability, the contractor is in the driver's seat in negotiating the cost for that item, since there are no accounting records to substantiate the claim. The Government seldom knows what it is really paying for in claim settlements.

Many claims result from contract changes. Because much defense equipment is complex and requires a long time to build, the Government often has to make technical changes during the life of the contract. Although most Government people try hard to keep these changes to a minimum, they are often necessary to take advantage of operating experience or of new developments. Some changes are of an urgent nature and have to be authorized before the work can be priced, to prevent a contractor from proceeding with unnecessary work in areas affected by the change.

Once a large unpriced change has been made, the door is open. These changes are often very complex, requiring a lengthy period to prepare the necessary estimates and negotiate the price. Frequently, a large backlog of unpriced changes develops, and this backlog is still pending at the time the contract is completed. The contractor can then combine these changes with whatever other claims he is able to develop, valid or not, and submit a single large claim against the Government.

In these circumstances, it is usually not possible to determine the cost of the individual changes for which the Government is responsible. The Government is forced to negotiate a lump settlement. It is here that the contractor has the Government at a great disadvantage.

Contractors are very careful not to account for change orders sep-

arately. There is no requirement that they do so. Thus, contractors can use change orders as a basis for repricing these contracts. They have almost unlimited freedom in pricing change orders because their accounting system will never show the cost of the work. The Government can never really evaluate the amounts claimed or check up to see if it paid too much.

Contractors know that their chances of success on a contractual claim increase as the claim grows older. The case drags on, Government personnel familiar with the original contract and the claim move to other jobs. The new Government representatives do not have time to learn all the details in the backlog of claims. Rather than dispute the claim in ignorance, the Government negotiates a lump-sum settlement. Contractors take this into consideration in preparing their claim. The claim is made sufficiently large so they will still win their desired settlement, even though there is the appearance of compromise.

In a recent case, a contractor submitted a $70-million claim on a $70-million fixed-price contract. The contractor's supporting documentation filled dozens of file cabinets. The Government simply did not have enough people to review the claim in detail, much less analyze the supplier's voluminous backup material in order to arrive at a proper basis of settlement on the individual items. Actually, extra people would not have helped much because this contractor's accounting system does not identify the cost of changed work or the cost of resultant delays. This claim was settled on a lump-sum basis, at about 90 percent of the amount the contractor claimed.

TWO-MILLION-DOLLAR CLAIM ON ONE-MILLION-DOLLAR CONTRACT

In another case, a construction contractor submitted a $2 million claim on a $1 million contract awarded him in 1961. In view of previous unfounded claims by construction contractors which had been settled in their favor, my staff devoted considerable effort in originally writing this contract to protect the Government against unfounded claims. We provided that no changes could be authorized except in writing by a specifically designated Government representative. The contract specified that change orders had to be priced out before the contractor could proceed with the work. We carefully prepared the specifications in such a way as to leave no uncertain areas and we warned the contractor, in writing, exactly how the contract was to be administered to avoid unwarranted claims. The contractor was given the opportunity to withdraw before he signed the contract if he did not wish to perform on the basis we proposed. He did not withdraw.

The contract was awarded 7 years ago; the work was completed over 6 years ago; but the claim resulting from this contract is still not settled. The claim was denied by the contracting officer, but the contractor appealed and was upheld by a Government Contract Review Board. The contracting officer, doubting the legality of payment, requested a decision from the General Accounting Office prior to paying the claim. The lawyers representing the contractor then argued that the General Accounting Office did not have the right to review the claim. However, in 1966, the General Accounting Office ruled in the Government's favor and disallowed the entire claim.

22-490 O—69—pt. 2——4

The contractor's lawyers then brought suit in the U.S. Court of Claims. Since that time, there have been motions and cross-motions, briefs and counterbriefs. The most recent development is an offer by the contractor to settle if the Government would pay him only $1.5 million rather than the $2 million he originally claimed. Of course, this offer should be rejected. The Government owes him nothing.

To fight his claim we have had to expend thousands of hours of the time of our technical people whose services are required on urgent defense work.

Even more frustrating is that this very same contractor is able to repeat these tactics again and again because there is no Government-wide system to alert other Government agencies of his performance.

The Government continues to do business with contractors regardless of the time and effort it must spend fighting and paying unfounded claims.

ODDS FAVOR CONTRACTOR IN CLAIMS AGAINST GOVERNMENT

Once the contractor wins a settlement on one of these claims, he is apt to submit claims on other Government orders. He knows that the odds are in his favor; he has nothing to lose if the claim is disallowed. The Washington claims lawyers generally work on the basis of getting a percentage of what they can get out of the Government. Some manufacturers submit claims—valid or not—almost as a matter of course on their Government contracts. One way to deal with this problem would be to identify contractors who are taking advantage of the claims procedure, and to consider this in determining their suitability to perform other Government work.

In this regard, I believe the executive branch should maintain contract experience records which reveal such matters as original and final prices of contracts, the amounts of unfounded and exorbitant claims submitted by contractors, and the amounts of excessive profit, so that this information can be considered by all Government agencies prior to awarding subsequent contracts.

GOVERNMENT REIMBURSES CONTRACTORS' ADVERTISING COSTS

Chairman PROXMIRE. Admiral, in your testimony before the House Appropriations Committee, you stated that the Department of Defense is paying for advertising costs on defense contracts. I thought this was prohibited under defense regulations.

Admiral RICKOVER. No, sir. This is another major loophole in Government contracting.

I first testified on this subject before the House Appropriations Committee in 1961. Senator Howard Cannon, at about that time, testified before the Senate Appropriations Committee on the same subject.

As a result of this testimony, Congress included a provision in the fiscal year 1962 Department of Defense Appropriations Act prohibiting reimbursement for advertising costs of defense contractors except for (1) the recruitment of personnel required for performance of the contract; (2) the procurement of scarce items; or (3) the disposal of scrap or surplus materials. It was clear that Congress expected contractors to pay for advertising out of corporate profit, except for the

three items I just enumerated. I again testified on this subject in May 1967 before the House Appropriations Committee. Congress reiterated its position by including a prohibition against the Government paying advertising costs of defense contractors, in the fiscal year 1968 Department of Defense Appropriations Act.

These provisions were incorporated into the cost principles in section XV of the Armed Services Procurement Regulation. But, as I explained earlier, these cost principles do not apply to fixed-price and fixed-price-incentive-type contracts which account for three-fourths of all defense contracts. Contractors can charge advertising costs to these contracts despite the congressional prohibition.

It is clear that the intent of Congress is to insure that Government funds are not spent on advertising regardless of the type of contract. I have no reason to think that Congress wanted these costs disallowed under cost-type contracts only.

Yet to this day, I do not believe the Department of Defense has made any effort to insure that defense contractors are not reimbursed for advertising costs.

This is a real danger in a bureaucracy. You establish a rule and you think the problem has been solved, but the rule is then interpreted in such a way that the purpose is defeated. That is why hearings of the kind you are conducting are important. Congress constantly has to check; it constantly has to make certain that the laws and regulations are being carried out in accordance with the intent of Congress.

SECURITY INFORMATION AVAILABLE IN ADVERTISEMENTS

What also disturbs me is that many defense contractor advertisements are inimical to the security of the United States. A vast amount of technical information regarding this country's military capabilities is being given away through advertisements. I am not talking about classified information, whose publication is prohibited. I am referring to the large amount of unclassified information pertaining to manufacturing techniques and the capabilities of military hardware, all of which is valuable to potential enemies.

A recent statement attributed to a former Communist spy says, in effect, that the Soviet military attaché's office in this country is able to acquire openly and without subterfuge 95 percent of the material it needs to meet its intelligence objectives. It was stated that in most other countries Soviet-bloc agents spend 90 percent of their time in clandestine efforts to obtain information which can readily be found in American publications.

Let me give you some recent examples of what I am talking about. The November 1968 issue of *U.S. Naval Institute Proceedings* contains 36 pages of advertising by defense contractors. The October 1968 issue of *Armed Forces Management* magazine devotes 98 of 162 pages to advertising by defense contractors. Information is disclosed on the following:

Solid-state weapons control radar used on the F–4E Phantom.

Superjet aluminum used in C–5A.

Reducing weight of the C–5A's high-frequency communications system by 26 percent.

Description of fire power of CH–53 helicopter.

Shipboard missile radar fire control system.

A–7A Corsair II jet.

AS–12 missile which has the destructive power of a 155-millimeter high explosive projectile at ranges up to 6,500 yards.

One-man tank stopper weighing only 27 pounds and superior in range and accuracy to a 90-millimeter recoilless rifle.

New OH–6A convertible helicopter.

New ASW aircraft P–3C Orion.

A new radar unit to aid ballistic missile defense.

Tactical radar for pinpointing enemy mortar locations.

Navy's SQS–26 sonar for detecting enemy ships.

There are many magazines of this kind. The items being advertised are Government property. Neither the Government nor the public derives any benefit from such advertising. Only the corporations involved in creating a good image—it helps sell their stock and other products—and potential enemies of the United States derive benefit from such advertisements by defense contractors.

I am not even convinced that this advertising achieves its goal of creating a favorable image of the advertiser. The American public is not as gullible as Madison Avenue sometimes likes to believe.

Chairman PROXMIRE. In this connection, you may be interested in the reaction of Mr. Don Maclean of the *Washington Daily News*. He wrote the following in his column on June 4, 1968:

"We were sitting in the Embassy Theater here the other evening when in addition to the regular feature, we were treated to a short subject. It was in praise of the F–111 (TFX) which has had an unfortunate career in combat and is not thought to be too airworthy by those who must buy it. On the screen the F–111 flashes by while a deep voice says, 'This plane can fly nonstop across the Atlantic Ocean!' (So could Lindbergs's). The voice continues, 'This plane can drop bombs from low altitudes; this plane * * * et cetera, et cetera.' (The short subject is truthful to the extent that nowhere does it assert that the F–111 can do any of these things very well.) I assumed that the short was cranked out for propaganda purposes by the Defense Department, but at the end I saw that the producer was [name of contractor]. Judging from the film, the F–111 seems capable of marvelous maneuvers when it manages to stay airborne for any length of time."

RECOMMENDATIONS CONCERNING DEFENSE CONTRACTORS' ADVERTISING

Admiral RICKOVER. I believe specific actions can and should be taken to curtail advertisements of this type and also to insure that the Government does not pay for these or other advertisements.

Here is what could be done:

First, Congress should require the General Accounting Office to determine whether the Department of Defense has complied with the provisions of the Defense Appropriations Act specifically prohibiting reimbursement of advertising costs.

Second, the Department of Defense should be required to modify the present Armed Services Procurement Regulation provisions to prohibit reimbursement of advertising costs as an element of cost on any negotiated contract. Advertising costs would have to be paid from profits.

Third, a mandatory clause should be included in all defense contracts requiring prior Government security clearances for all adver-

tising relating to military hardware. I have such a clause in each of my contracts. It requires that the company must obtain Government approval prior to release of any information relating to work under the contract. Were you to read any of these magazines you would find no advertisements or technical data about naval nuclear propulsion plants.

GOVERNMENT-OWNED TOOLS IN CONTRACTORS' PLANTS

Chairman PROXMIRE. You have testified on excessive use of Government-owned facilities in contractors' plants. We have made some progress in getting the Department of Defense to improve its regulations in this area. Do you have any further recommendations on this subject?

Admiral RICKOVER. Yes, sir. This is another significant loophole in the Armed Services Procurement Regulation.

Department of Defense policy requires that contracting officers put Government-owned machine tools in possession of contractors to the greatest possible use in the performance of Government contracts or subcontracts, so long as this does not confer a competitive advantage on the holder. I believe this policy causes machine tools to be kept in suppliers' plants much longer than necessary.

My experience has been that Department of Defense contracting officers routinely authorize use of Government-owned machine tools, even after the contracts for which the tools were originally provided have been completed. As a result, the Government incurs considerable additional cost; these machine tools are not available for bona fide needs, and suppliers' incentive to invest in their own machine tools is sharply reduced. In addition, this policy inhibits competition.

Initially, there is probably a real need for the Government to place Government-owned tools in a particular supplier's plant. But after a few years, this need generally passes. However, as other contracts are placed with the supplier, Government contracting officers automatically keep on authorizing him to use the Government-owned tools on the new orders, the theory being that once the Government has had to buy tools it should use them extensively to make it look like a good investment. It is not a question whether the Government-owned tools are actually needed to do the work, or whether authorizing their use on new contracts will keep the tools at the supplier's plant longer than necessary, but whether the supplier is willing to use them on other Government work.

These decisions perpetuate the retention and use of Government facilities in suppliers' plants, whether or not this is in the best interest of the Government.

Contractors naturally like this policy. It is to their advantage to retain the Government tools as long as possible because they get extra production capacity with no investment or risk.

The Department of Defense policy states that Government-owned tools should be used on other Government work in the factory so long as this does not confer a competitive advantage on the holder. Obviously, any contractor who holds Government-owned machine tools has a substantial competitive advantage. If these tools did not provide such an advantage, he would not be so interested in getting and keeping them.

I have always followed the policy that contractors should provide their own machine tools to perform my work. To get them to do so, I have established a firm requirement that they must use their own machine tools for nuclear work. For the most part I have been successful in achieving this objective. In a few exceptional cases I have been forced to resort to use of Government-owned machine tools.

Several years ago, I had to provide a contractor with Government tools in order to get an important job done. It would not otherwise have been possible to get it done on time. Despite the large number of machine tools the Government owns, I was told that these tools were not available and that the Navy would, therefore, have to buy new tools. The ones I needed were common, general-purpose machine tools. It seemed preposterous that there were not excess machine tools in the Department of Defense inventory which I could use. But I was told that all were in use and that I would have to buy new ones. I decided to check into the matter further. I screened the tools supposedly in use, and soon found suitable ones that could be made available for my work. This saved more than a million dollars on the particular contract. More important, it indicated to me that serious deficiencies existed in this area of Government procurement.

I testified to the House Appropriations Committee in May 1966 concerning this matter and recommended that Congress ask the General Accounting Office to look into the way the Department of Defense administers Government-owned machine tools; I suggested the General Accounting Office determine how much the Government has invested in machine tools which are unnecessarily tied up in suppliers' plants. I also recommended that Department of Defense procedures be strengthened to make certain that decisions to authorize the continued use of existing Government-owned facilities at suppliers' plants be reviewed to the same extent as the decisions to provide the facilities in the first place.

The General Acounting Office carried out a review of Government-owned equipment in contractor plants. As you know, they found significant deficiencies. You and your committee were instrumental in focusing public attention on these deficiencies. Since that time, some improvements have been made. However, I have seen no effort by either the Department of Defense or the General Accounting Office to change the existing policy of routinely authorizing use of existing Government-owned equipment on subsequent Government contracts.

I again recommend that you ask the General Accounting Office to check into how many Government-owned machine tools remain in contractor plants after completion of the program for which they were originally provided, determine the level of Department of Defense management at which these decisions are made, and review the controls in effect to insure that Government-owned equipment is not left too long in supplier plants because of routine perfunctory authorizations by contracting officers.

GOVERNMENT AGENCIES HAVE A "GIVEAWAY" PATENT POLICY

Chairman PROXMIRE. Admiral, I know that you have expressed concern about the patent policies being followed by the Defense Department. Professor Weidenbaum also mentioned patents briefly in his testimony the other day. Could you give us your views on this matter?

Admiral RICKOVER. Mr. Chairman, I have been disturbed for many years at the patent policies followed by most Federal agencies, particularly the Department of Defense. Except for the Atomic Energy Commission and the National Aeronautics and Space Administration, most Government agencies have adopted "giveaway" patent policies under which the Government normally retains only a nonexclusive royalty-free license for itself, granting title and principal rights to contractors, even when inventions are developed at public expense under Government contracts.

In June 1961, I testified at length on this subject before the Senate Committee on the Judiciary, with Senator John L. McClellan presiding. Senator Russell Long, among other Senators, was also present. He has performed a major service to the Nation by bringing this matter to public attention. As a result of the attention focused on the problem by Senators Long and McClellan, as well as my testimony and that of others, the executive branch conducted a review of patent practices within the various agencies as they affect the disposition of rights to inventions made under contracts with industry. Upon completion of this study, President Kennedy, in October 1963, issued a "Memorandum to the Heads of the Executive Departments and Agencies on Government Patent Policy."

Basically, the President's memorandum, which is not an Executive Order and has no basis in law, encourages, but does not require, the Government to acquire the principal rights to inventions, where the nature of the work to be undertaken or the Government's past investment in the field of work favors full public access to resulting inventions. On the other hand, the policy states that the public interest might also be served by according exclusive commercial rights to the contractor in situations where he has an established nongovernmental commercial position, and where there is greater likelihood that the invention would be worked and put into civilian use than would be the case if the invention were made more fully available.

"TITLE" POLICY VERSUS "LICENSE" POLICY

The President's memorandum attempted to strike a middle ground between a "title" policy and a "license" policy. The "title" policy is based on the precept that since the research leading to the invention was carried out with public funds, the rights to the invention must be taken by the Government and dedicated to the free use of the public. The practice of permitting such rights to rest in the hands of a private corporation endangers the public interest by further concentrating economic power, to the detriment of a freely competing economy.

Conversely, the "license" policy provides the Government with only a royalty-free, nonexclusive license under the patent, with all other rights being granted to the contractor. The contractor is permitted to patent and market the invention as though it were an ordinary commercial item developed at his own expense. The proponents of this policy argue that the public interest is best served by providing incentives of exclusive rights to those who invent or discover. They feel that a practice of making the creative efforts of Government contractors freely available for the use of everyone does not benefit the public interest or carry out the intent of the patent law.

A patent, you must remember, is a grant of certain rights by the Government to an inventor. The grant lasts for 17 years. During this time it gives the inventor, or someone to whom he assigns his patent, the legal right to prevent anyone else from making, using, or selling the invention. The patentholder thus has a property right which, in effect, is a monopoly. He may sell or assign the patent itself. He may also grant licenses to manufacturers and sell the invention, practice the process, or carry on any other activity in connection with the subject of the patent. Or, he may choose to practice the invention exclusively for his own profit. If his patent is infringed, he is protected by law. He may receive damages for any economic injury sustained.

The President's memorandum specifies three categories of procurement that result in different treatments of patent rights: Category I—Title in the Government, category II—License in the Government, and category III—Disposition of rights deferred. It is categories I and II that I want to discuss.

The Government "normally" acquires title—that is, the principal or exclusive rights—to inventions made in the course of, or under, a Government contract in four situations:

One, when the contract is for the development of products or processes specifically intended for commercial use by the general public, such as an improved fertilizer, or when its use will be required by governmental regulation, such as an aircraft safety device. Such contracts are relatively rare in the Department of Defense.

Two, when the contract is for the development of products or processes directly related to the public health, not items of purely military application. Situations like this could be found in the Department of Defense, as in contracts for the development of drugs and medical instruments, but more likely would be found in contracts of other Government agencies such as the Department of Health, Education, and Welfare.

Three, when the contract is in a field of science or technology in which there has been little or no significant experience except for work funded by the Government, or where the Government has been the principal developer. The best example here is the field of nuclear energy where the Government financed all early research and development work.

Four, when the contract is in one of the following two fields of nonpersonal service; either for operating a Government-owned research or production facility, or for coordinating and directing the work of others.

In every other case, that is, category II—the Government grants the patent rights to industry. The policy words are dressed up a bit so that they do not appear so black and white. Granting such rights to a contractor is supposedly intended to best serve the public interest—"by encouraging the contractor to direct his highest quality personnel, know-how and experience toward solving the Government's research problems; by recognizing the contractor's equities in the technical field; and by leaving the invention in the control of an organization qualified to further develop it into a commercially usable product in the shortest possible time."

Regardless of the niceties of the word engineering, it all boils down to the fact that valuable patent rights are being given away to industry—rights that belong to the American taxpayer.

What does the executive branch's generosity get the taxpayer? I know of no case where companies charge more to do research and development if they are not permitted to keep proprietary or commercial patent rights. The contracts with these companies are nearly all cost plus, and the fees are about the same throughout the Government. Conversely, I know of no case were a contractor has offered to accept a smaller fee if he is permitted to keep the proprietary or commercial patent rights that result from his Government-financed research and development.

Nor do I agree with the statement frequently made that unless patent rights are assigned to industry, their employees will not work assiduously. I have never seen anything of the sort. A man who has an idea in his mind, if he is worth his salt, will want to get it out. He will fight all obstacles to get it out; it really makes no difference to the individual engineer or scientist one way or another because the company gets to own the patent rights anyway.

INDUSTRY HAS A DUAL STANDARD FOR PATENTS

Now, the companies take a different stand toward their Government than they do to their own employees. Generally, their own employees must sign an agreement providing that the company takes title to the patents they develop. Apparently, the companies desire better treatment from the U.S. Government than they accord their own employees. This is a classic refutation of the proverb, "what's sauce for the goose is sauce for the gander."

Thus, when defenders of the giveaway patent policy argue that contractors have a right to patent inventions made under Government contract, they demand for themselves different rights than they are willing to give their own employees and subcontractors. Mass production and the virtual disappearance of the independent inventor have changed the original intent of the patent law which was to encourage individual inventiveness. Patents do not generally belong to the inventor; they belong to those who employ him.

Statistics show that only 24 percent of the patents issued for inventions in 1967 were issued to individuals, 73 percent to corporations, and 3 percent to the U.S. Government. Comparable figures for the period 1946 to 1950 show that individuals received 41 percent of the patents issued, corporations were granted 58 percent and the Government 2 percent. Since 1950, the percentage of patents issued to individuals has been steadily declining. By depriving employed inventors of any right to the products of their inventive brains, industry has morally precluded itself from making a valid claim to inventions paid for by Government funds. Once you disregard the claims of talent, know-how, and personal effort in favor of the fact that patent rights lodge entirely in whomever pays for the research that produces inventions, there is no merit in arguments that somehow there should be a different law governing private and public research investment.

It is interesting to note that a recent study concerning industry ownership of patents resulting from Government-financed research and development work revealed that between 87 and 93 percent of the patents have never been commercially used by the companies holding them. I mentioned earlier that one of the prime reasons advanced by proponents of the "license" policy for vesting in industry title to

Government-financed patents is to develop it further into a commercially usable product, and in the shortest possible time. Supposedly, this allows the incentives of the patent system to operate for the ultimate benefit of all. No mention, of course, is made of the benefit accruing to the company's stockholders.

The defenders of the "license" policy frequently point out that the amount of remuneration received on most patents is small in comparison to overall company sales. I do not doubt this. However, for every patent that proves to be a "dud," there is always the possibility of finding a "diamond in the rough." Two examples come to my mind. They have been publicly reported so I am not divulging any privileged information.

The Massachusetts Institute of Technology acquired a computer patent in the course of research paid for by the Navy. Litigation shows this patent to be worth many millions of dollars. MIT's patent covers a memory core unit that is essential in virtually all high-speed digital computers. The International Business Machines Corporation agreed to pay MIT $13 million for use of the patent in an out-of-court settlement. According to the New York Times, the Radio Corporation of America also obtained a license arrangement to use the patent providing royalties were paid.

The Department of Health, Education, and Welfare was involved in an even more striking case. A test kit that detects one form of mental retardation in newly born infants was developed by the University of Buffalo under research and development work sponsored by the Department. The university granted an exclusive license to Miles Laboratories to put the kit into mass use. Ultimately, the Department of Health, Education, and Welfare nullified the Miles license agreement and took title to the invention because the price charged by the company for the kit was out of line with the costs incurred by the inventor for the kits—$262 compared with $6.

Large corporations have tremendous financial resources. Do we need to concentrate even more economic power in their hands? The Government's patent policy does exactly this. One-half of the patents acquired by contractors as a result of Government-financed research and development work are owned by 20 large corporations. These are the very same companies that receive the lion's share of contracts. But are they so poorly reimbursed for their efforts that the American taxpayer has to pay them a bonus?

You know how concerned I am that the industry viewpoint is widely accepted in policymaking circles of the Government. Two agencies—the Atomic Energy Commission and the National Aeronautics and Space Administration—are required by statute to take Government title to inventions developed in the course of contracts, subject to waiver of rights by the Government.

Yet, in one case, even the Atomic Energy Commission, which has one of the better patent policies, was granting one of my prime contractors patent rights on inventions and discoveries resulting from work done for my program. When I discovered this, I had my staff conduct a review. We found that up to that time, 100 patents had been granted as a result of inventions and discoveries made at one of the Atomic Energy Commission-owned, contractor-operated laboratories. The Government had retained all rights in about one-third of these patents, the contractor being granted a royalty-free, nonexclusive

license in each case. In the remaining 67 patents, the contractor was granted rights greater than a royalty-free, nonexclusive license. In fact, in some 28 instances, the Government retained for itself *only* a royalty-free, nonexclusive license and granted *all other rights* to the contractor. In addition to building an advantageous patent position from these 67 patents, the contractor realized royalties from patents granted on inventions totally financed by the Government. This contractor had received a fee totaling many millions of dollars for operating the Government laboratory. There is no need to grant him rights to patents resulting from inventions and discoveries made in this Government-financed laboratory.

When I pointed this situation out to the responsible Atomic Energy Commission officials, they took steps to require that I be consulted on the disposition of rights to patents resulting from work under my cognizance. So far as I know, the contractor has not been granted title to any patent resulting from work done for my program since that time.

I believe if you look into the practices of the National Aeronautics and Space Administration you may find that they, too, give away many patent rights by administrative determination.

The basic concept involved in my patent testimony is that the Government is entitled to get its money's worth for its research and development procurements as for every other procurement. This is not the case under our present "giveaway" patent policy. Individual firms realize benefits on Government research and development contracts far out of proportion to the work they have done.

NEED FOR PATENT LEGISLATION TO PROTECT THE PUBLIC

A matter of broad national policy is involved here. I feel there is a compelling need for definitive legislation that will protect the public interest in this area. At present, instead of Congress providing direction and control over the Government's patent policy, each agency is proceeding on its own in a different direction. I do not believe Congress should abdicate its constitutional rights and duties to the executive branch. By perpetuation over a period of years, these rules have become precedents which may ultimately assume the force of law.

I urge Congress to enact legislation which will establish uniform guidelines for all Federal agencies—guidelines requiring them to retain for the American people the rights and title in all inventions financed by public funds.

Chairman PROXMIRE. Professor Weidenbaum said that contractors could get patents from Government work and that this reduced the amount of competition in defense industries.

Admiral RICKOVER. He is right, sir.

Chairman PROXMIRE. This would have a very adverse effect on our economy. The great strength of our economy is its competitive force.

Admiral RICKOVER. It is having a greater effect on what our people think of their Government.

Chairman PROXMIRE. Admiral, this is a pertinent issue. I would like to ask the staff to include a copy of Admiral Rickover's testimony before the Senate Judiciary Committee for the record.

(Admiral Rickover's June 2, 1961, testimony before the Senate Judiciary Committee appears in this volume as App. I. See p. 99.)

DEFENSE DEPARTMENT INFLUENCED BY INDUSTRY

Chairman PROXMIRE. Admiral, you stated that in your opinion the Department of Defense is too much influenced by an industry viewpoint.

Admiral RICKOVER. Yes, sir. This viewpoint is most pronounced in Government contracting, where exactly the opposite should be the case. Here, the viewpoint should be strongly pro-Government in order to protect the interests of the public. Industry has a plethora of employees to protect its interests.

There is much interchange of personnel between industry and Government; this brings to the Government many able men. In some cases, this exchange of personnel has resulted in situations where Government officials now represent the contractors with whom they formerly did business, and contractor officials represent the Government in dealing with their former companies. The problem is that during a lifetime of working in a given field, these men usually acquire a viewpoint that parallels the philosophy and the practices of their business organizations.

Chairman PROXMIRE. Are you saying that the philosophy is to protect the companies in the industry and not the taxpayer or the Federal Government?

Admiral RICKOVER. Well, I would put it this way. When a man has been practicing a given religion all his life, it is very difficult for him to change late in life. For example, Mr. Charles Wilson, who had been president of General Motors, became Secretary of Defense. You remember his statement, "What's good for General Motors is good for the country"——

Chairman PROXMIRE. Yes, indeed.

Admiral RICKOVER. Mr. Wilson was a man of integrity, but he had been in business all his life. What he said was what he thought and believed, but his was a business-oriented philosophy. Today some people in positions of great authority in the Defense Department hold a similar viewpoint. I do not mean to intimate that they are not sincere or that they do not try to do their best. But what *they think* is right for the Government and what is *actually* right for the Government may be two different things.

The problem is not only economic. Consider the effect on the morale of a career civil servant or military employee who watches men from industry come into policymaking positions for short periods of time, and go back to industry after 2 to 3 years, sometimes less. In some cases, they will then be dealing with the very people they supervised during their tour in Government.

Career men in Government may feel that some of these appointees are simply acquainting themselves with the inner workings of Government so they will be more effective in dealing with the Government when they return to industry. Can you expect them to be committed wholeheartedly to their work in this environment? A man experienced in private industry may contribute much to the Government, but I would require that, as a minimum, he stay 5 years.

If I met an intelligent young men who aspired to be a business leader, I would advise him to get a job with an industrial concern and work his way to the top. If a young man aspired to be a leader in the Defense Department or the Navy, I would give him the very same advice,

because the top people in the Department of Defense are appointed from private life. It is little wonder that we have trouble attracting competent young people into Government service and keeping them.

The tendency to the industry viewpoint in the Department of Defense shows up in various ways. Presently, an important concern in Department of Defense contracting circles appears to be that contractors should get enough profit.

I previously mentioned a case where Navy procurement officials proposed to award without negotiation a multimillion-dollar contract that was obviously overpriced. When I objected to this award, I was accused of trying to keep the firm from making enough profit. The procurement officials were convinced that the contractor was not making enough profit. Yet, the firm had been realizing record sales, nearly all of which were on Government contracts for which there has been little or no price competition.

This particular contractor is well equipped to look after himself. He has plenty of accountants, estimators, and lawyers looking out for his interests. The Navy officials should have been concerned with the taxpayers' interest rather than the contractor's.

Another case involved a design contract for a new submarine. There was almost no contractor risk in this contract, and negligible investment. Because of this, and because of the experience he would gain in the performance of the contract, the contractor agreed to accept a 5-percent profit.

The Navy contracting officer refused to approve the contract because the profit guidelines in the Armed Services Procurement Regulation "allowed" a profit of 8 to 10 percent. He told me I was breaking the rules by not paying 8 to 10 percent profit. I told him, "Fine, you write a letter to Congress and to the newspapers and tell them Rickover is breaking the rules by saving Government funds. See what the public reaction will be."

He finally agreed to the contract at 5-percent profit on condition that the contractor revise his proposal so the record would show that the contractor himself had requested the lower profit. In this way he could not be criticized by his superiors for paying a profit lower than "allowed" by the regulations.

Chairman PROXMIRE. You mean that there are officials in the Navy who have attempted to force you to give a higher profit to companies?

"THE NICKEL LETTERS"

Admiral RICKOVER. Yes, sir. I call a recent experience with this type of thinking "the nickel letters." In August of this year the Navy proposed to place a $50 million contract with a company at a profit of 2.29 percent.

Chairman PROXMIRE. Let me understand the 2.29-percent figure. Was that the percentage of profit to sales or to cost?

Admiral RICKOVER. It is 2.29 percent of estimated cost. That may sound like a low profit——

Chairman PROXMIRE. It does indeed. In testimony yesterday, the Department of Defense witness said that the average profit on defense work was about 9.4 percent.

Admiral RICKOVER. Actually, it was quite adequate under the circumstances. The contract involved no risk for the company and almost

no investment, and the Navy has been working on the same terms with this company for many years.

In any event, because of the amount of this contract, it had to be approved by higher authority. When I submitted the contract for approval, I received a formal letter stating the contract was disapproved because the profit was too low.

Chairman PROXMIRE. Who sent you the letter?

Admiral RICKOVER. A Navy procurement official. I replied the next day. I said that I thought my job as a Government agent was to obtain services for the Government at the lowest possible cost. However, in order to have this contract approved, I said I was willing to increase the fee on this $50 million contract from $1,147,023 to $1,147,023.05—an increase from 2.29 percent to 2.2900001 percent. I thought it was worth a nickel of Government funds to avoid delaying the contract any further.

The procurement officials were not satisfied with my response. Since then a whole series of letters—six, I think—has been exchanged on this issue. The procurement officials have tried to defend their attempt to require me to pay a higher profit. I insist that they were wrong to require higher fees than necessary. They have never admitted their error. After the "nickel letters" experience, I can better understand the frustration that prompted Cromwell to say to the representatives of the Church of Scotland: "I beseech you, in the bowels of Christ, to think it possible you may be mistaken."

In the end the contract was let on the terms I originally proposed and I am happy to report that the Government did not have to pay the extra nickel.

Chairman PROXMIRE. May we have copies of those letters for the record, Admiral?

Admiral RICKOVER. I will have to get clearance from the Department of Defense to give them to you.

Chairman PROXMIRE. Admiral, I would like you to do so. I would be very interested to see the specific details of this example. I find it incredible. Please let me know if you have any difficulty in obtaining clearance for the "nickel letters." My staff will help if you like.

Admiral RICKOVER. Yes, sir.

(The information follows:)

DEPARTMENT OF THE NAVY,
HEADQUARTERS NAVAL MATERIAL COMMAND,
Washington, D.C., August 22, 1968.

From: Chief of Naval Material.
To: Commander, Naval Ship Systems Command
Subj: Cost-Plus-Fixed-Fee Pre-Negotiation Business Clearance SS 12,918 [Contractor *Z*].
Encl: (1) Original of subject Business Clearance

1. Subject business clearance covers the procurement of (classified, matter deleted) of nuclear reactor plant components (classified matter deleted) for use in nuclear powered submarines, and the furnishing of associated components, repair parts, stock components, associated technical data, engineering services, reports, replacement reactor plant components and refueling components.

2. Work is scheduled to complete in November 1973—over five years in the future—and the estimated cost is $50,808,394 plus a fixed fee of $1,147,023 (2.29%) for a total of $51,227,387.

3. The contractor proposed a 5% fee but the negotiating team proposes to reduce this to 2.29% based upon their utilization of the weighted guidelines method set forth in ASPR 3–808. The result of their application of the weighted guidelines is as follows:

Input	Recognized costs	Weight range (percent)	Assigned weights (percent)	Fee, dollars
Subcontracts	$46,654,877	1 to 5	1.75	$816,460
Labor	1,472,972	9 to 15	12.5	184,122
Overhead	1,952,545	6 to 9	7.5	146,441
Total	50,080,387			1,147,023
Composite weight			2.29	
Risk (CPFF contract)		0 to 1	0	
Performance		−2 to +2	0	
Selected factors		−2 to +2	0	
Total, weighted guidelines			2.29	1,147,023

4. Paragraph 7 of subject clearance states that all of the components are subcontracted and are the responsibility of the prime contractor, a responsibility that will continue for over five years. This Office cannot agree that this responsibility is worth only a 1.75% assigned weight as shown above, with a zero assigned weight for contractor's risk below the line. Nor has it been shown that the contractor's request for a 5% fixed fee is an unreasonable one.

5. Enclosure (1) is returned approved with respect to the pre-negotiation position on costs but disapproved with respect to a fixed fee of 2.29%. A higher fee is authorized.

Signed/——— ———
(By direction).

(The letter was signed by Director, Procurement Contract and Clearance Division, Office of Naval Material.)

DEPARTMENT OF THE NAVY,
NAVAL SHIP SYSTEMS COMMAND,
Washington, D.C., August 23, 1968.

Memorandum for Chief of Naval Material.
Subj: Chief of Naval Material Requirement That NAVSHIPS Pay Higher Fee On Proposed Contract With [Contractor Z]
Ref: (a) Naval Material letter MAT 022/GWR; Ser: 03195 dated 22 August 1968

1. Reference (a) returned a Naval Ship Systems Command (NAVSHIPS) request for Chief of Naval Material (CNM) approval of a pre-negotiation business clearance for a contract with [Contractor Z] involving the procurement of reactor components for nuclear ships. The contract is estimated to cost $50,808,394 for which NAVSHIPS proposed to pay a fixed fee of $1,147,023 (2.29%). Reference (a) disapproved the fixed fee of 2.29% as being too low.

2. I am at a loss to understand the rationale of reference (a) which would require NAVSHIPS to pay a higher fixed fee. It has been my understanding that Government officials are obligated to obtain services at the lowest possible cost. For many years I have been exhorted

to do so by innumerable documents issued by the President of the United States, the Director of the Bureau of the Budget, the Secretary of Defense, the Secretary of the Navy, the Chief of Naval Material, and the Commander of Naval Ships Systems Command. I have been able to obtain these very same services from [Contractor Z] and others for many years at the 2.29% or a lower fixed fee.

3. Reference (a) states that CNM cannot agree that the contractor's risk in this procurement is zero, but no reason is given to show that there is any risk. I hereby reaffirm that the contractor's risk is and always has been zero—period.

4. In order not to delay award of this contract, I will comply with your requirement that a higher fixed fee be paid. I am therefore recommending to NAVSHIPS Division of Contracts that the fixed fee on this $50,808,394 contract be increased from $1,147,023 to $1,147,023.05 or from 2.29% to 2.2900001%.

5. In view of my compliance with your request I consider this matter to be closed.

H. G. RICKOVER.

DEPARTMENT OF THE NAVY,
HEADQUARTERS NAVAL MATERIAL COMMAND,
Washington, D.C., August 26, 1968.

Memorandum for Vice Adm. H. G. Rickover (NAVSHIP-08).
Subj: Pre-Negotiation Business Clearance SS 12,918, [Contractor Z].
Ref: (a) CNM ltr MAT 022/GWR Ser: 03195 of 22 Aug 1968 to NAVSHIPS;
(b) NAVSHIPS Memo for CNM of Aug 23, 1968.

1. Reference (b) has misinterpreted reference (a). No direction was provided to increase the fee under subject contract. The rationale presented in subject pre-negotiation clearance was insufficient as well as inconsistent to justify the negotiation position in accordance with the weighted guidelines set forth in ASPR, Section 3-808.3. Review with members of the negotiation team failed to elicit further information.

2. The action proposed in paragraph 4 of reference (b) is disapproved and by copy of this memorandum the Commander, Naval Ship Systems Command is requested to provide in the post negotiation clearance sufficient information to logically justify the fee negotiated.

Signed/———— ————,
Chief of Naval Material.

SEPTEMBER 11, 1968.

Memorandum for the Chief of Naval Material
Subj: NAVSHIPS contract N00024-69-C-5101 with [Contractor Z] for nuclear propulsion plant components.
Ref: (a) NAVMAT memorandum Ser 03195 dtd 22 August 1968;
(b) VADM H. C. Rickover memorandum to the Chief of Naval Material dtd 23 August 1968;
(c) Chief of Naval Material memorandum for VADM H. G. Rickover dtd 26 August 1968.

1. In reference (a), the Naval Material Command (NAVMAT) disapproved a Naval Ship Systems Command (NAVSHIPS) pre-negotiation business clearance to contract for nuclear propulsion plant components. The contract was estimated to cost $50,808,394 for which

NAVSHIPS proposed to pay a fixed fee of $1,147,023 (2.29%). NAVMAT approved the NAVSHIPS pre-negotiation position on costs, but disapproved the proposed fixed fee of 2.29%, stating that "a higher fee is authorized".

2. In reference (b), I informed you of my recommendation to the NAVSHIPS Division of Contracts that the fixed fee on this $50,808,-394 contract be increased from $1,147,023 to $1,147,023.05, or from 2.29% to 2.2900001%, thereby complying with the NAVMAT directive that a higher fixed fee be paid.

3. Reference (c) stated that I had "misinterpreted" the August 23 NAVMAT memorandum, reference (a), and that:

> "No direction was provided to increase the fee under the subject contract. The rationale presented in subject pre-negotiation clearance was insufficient as well as inconsistent to justify the negotiation position in accordance with the weighted guidelines set forth in ASPR, Section 3–808.3. Review with members of the negotiation team failed to elicit further information.
>
> "* * * the Commander, Naval Ship Systems Command is requested to provide in the post negotiation clearance sufficient information to logically justify the fee negotiated."

4. Subsequent to the above memorandum, NAVMAT approved the award of this contract at the fixed fee originally recommended by NAVSHIPS, namely, 2.29%, thereby negating the NAVMAT directives in reference (a) and (c). The contract has now been awarded to and accepted by [Contractor Z.]

5. I would like to make two points relative to award of this contract:

a. I consider that reference (a) was quite clear in requesting that NAVSHIPS pay a higher fee on this contract. Reference (a) stated:

> "Paragraph 7 of subject clearance states that all of the components are subcontracted and are the responsibility of the prime contractor, a responsibility that will continue for over five years. This office cannot agree that this responsibility is worth only a 1.75% assigned weight as shown above, with a zero assigned weight for contractor's risk below the line. Nor has it been shown that the contractor's request for a 5% fixed fee is an unreasonable one.
>
> "Enclosure (1) is returned approved with respect to the pre-negotiation position on costs but disapproved with respect to a fixed fee of 2.29%. A higher fee is authorized."

b. In reference (c) you stated that the NAVSHIP'S rationale for a 2.29% was "insufficient as well as inconsistent to justify the negotiation position in accordance with the weighted guidelines set forth in ASPR, Section 3–803". Please note that NAVMAT has reviewed and approved prime contracts for nuclear component work at levels of 2.29% or less for the past several years.

6. In sum, NAVMAT's contribution to the negotiation and award of this contract was:

a. A directive that NAVSHIPS pay a higher fixed fee than NAVSHIPS considered appropriate, and higher than the supplier was willing to acept.

b. A recision of that directive.

c. A delay of 20 days in obtaining a contract.

H. G. Rickover,
Deputy Commander for Nuclear Propulsion.

22–490 O—69—pt. 2——5

DEPARTMENT OF THE NAVY,
HEADQUARTERS NAVAL MATERIAL COMMAND,
Washington, D.C., September 26, 1968.

Memorandum for Vice Admiral H. G. Rickover (NAVSHIPS–08).
Subj: [Contractor Z] Procurement for Nuclear Reactor Components.

1. I have reviewed your letter of 11 September 1968. I believe it appropriate to indicate that the material provided my staff on 27 August 1968 regarding the [Contractor Z] contract should have been set forth in the pre-negotiation clearance submitted by NAVSHIPS. In addition, if the "weighted guidelines" method of profit determination was not considered appropriate, the basis could have been set forth in the pre-negotiation clearance and a waiver requested to the appropriate ASPR provision.

2. I mention the above two points to indicate my concern that in our acquisition process there is required a mutual exchange of information, such that our recent exchange of correspondence on this matter would be unnecessary. I hope that I may have your personal support to the end that our staffs will freely review proposed contractual actions well in advance so that we can achieve our mutual goals of rapid and businesslike procurements of maximum benefit to the Navy.

Signed/——— ———,
Chief of Naval Material.

DEPARTMENT OF THE NAVY,
NAVAL SHIP SYSTEM COMMAND,
Washington, D. C., October 16, 1968.

Memorandum for the Chief of Naval Material.
Subj: [Contractor Z] Procurement of Nuclear Reactor Components.

1. Your memorandum of 26 September 1968 is the latest in the series of correspondence concerning the fixed fee paid to [Contractor Z] on a recent NAVSHIPS contract for nuclear reactor components. Your memorandum implies that this problem arose because NAVSHIPS rationale for paying proposed fixed fees was not properly documented. You asked for my personal support so that proposed contractual actions will be freely reviewed well in advance and mutual goals of rapid and businesslike procurement of maximum benefit to the Navy can be achieved.

2. Documentation has nothing to do with the issue I raised. The point is, in my opinion, NAVMAT procurement officials should not be directing NAVSHIPS to pay higher fees.

3. My records indicate your office has reviewed 27 contract actions totaling about $449 million for work under my technical cognizance during the past four years. All these contracts provide for fixed fees of about 2.29% or less. I do not think NAVMAT approved these contracts without understanding the basis for these fixed fees. The nature of these contracts has been discused in great detail on several occasions by the members of our respective staffs; specifically, with Admiral ——— and his staff on August 14, 1964, with Admiral ——— and his staff on July 10, 1967, and again with Captain ——— and his staff on August 27, 1968. Other discussions have been held from time to time. In each case, the decision has been made to proceed with the procurement as recommended by NAVSHIPS.

4. You can be assured of my support in the future, just as in the past, in achieving rapid and business-like procurement of maximum benefit to the Navy.

5. I trust this issue is now settled.

H. G. RICKOVER,
Deputy Commander for Nuclear Propulsion.

Admiral RICKOVER. Legislation has been enacted and rules adopted to help protect the Government's contractual interests. However, the industry lobbies and industry-controlled advisory groups have an impressive record of watering down these laws and rules so as to lessen their impact. Moreover, industry has found there is no real penalty for refusing to comply with these laws and rules. The Truth-in-Negotiations Act, requiring certified cost and pricing data from suppliers in noncompetitive situations, is now 6 years old. Yet, as I stated, I found that a major contractor, with over a billion dollars in Government contracts, is not complying with the requirements of the act. The act is, to all intents and purposes, a dead letter.

I also mentioned that all major computer manuafcturers regularly refuse to provide cost and pricing data on multimillion-dollar computer contracts. The Government departments and, I believe, the General Accounting Office are aware of this situation, but the manufacturers continue to withhold this cost data with complete equanimity.

COMMERCE DEPARTMENT RELUCTANT TO USE AUTHORITY OF DEFENSE PRODUCTION ACT

Chairman PROXMIRE. I understand you have had difficulty in obtaining assistance from the Department of Commerce in getting companies to manufacture defense equipment.

Admiral RICKOVER. Yes, sir. The Defense Production Act of 1950 was passed to assure that the Government could obtain necessary defense equipment. By this law, the Department of Commerce is authorized to direct a manufacturer to accept contracts essential to national defense. The basic assumption of this law is that the national defense should come before the private interests of business concerns.

The act has not been a strong tool because the Department of Defense and the Department of Commerce have been reluctant to use the authority the law gives them. Their great power, as contrasted with their small actions, is as if Prometheus had become manager of a match factory.

Chairman PROXMIRE. Admiral, last spring you testified before the House Banking and Currency Committee about a case in which the Department of Commerce would not issue a directive after a supplier had refused to accept and perform a contract for submarine propulsion plant equipment. As I remember, the supplier had a considerable amount of commercial business, and he said he could not spare the engineering personnel necessary for the defense work.

Admiral RICKOVER. Yes, sir.

The contract was crucial to development of the new design submarine, so the Navy asked the Department of Commerce to direct the firm to perform the order under the Defense Production Act. At first, Department of Commerce officials promised to help but when they

learned that the contractor would resist the directive, they backed down and announced they would not issue it.

Department of Defense headquarters soon got involved. The first question they asked was: "Why couldn't the Navy hold up the submarine for a year or two so that the manufacturer could finish his commercial contracts?"

Chairman PROXMIRE. Did this firm have enough engineers to do this job?

Admiral RICKOVER. The work involved about one-thirtieth of 1 percent of his total business. He had many contracts that dwarfed this order. He is doing the job now; we are satisfied with the number of engineers assigned to the job and the speed with which they were assigned once the contractor agreed to do the work.

NAVY FORCED TO ACCEPT REDUCED RIGHTS IN CONTRACT

Chairman PROXMIRE. How did you finally get a contract if the Department of Commerce refused to issue a directive?

Admiral RICKOVER. The Department of Defense would not back the Navy's effort to obtain a directive from the Department of Commerce. The Navy was told to resume negotiations with the firm. By that time, the firm had decided to accept the contract in order to avoid unfavorable publicity. However, in order to get the contract the Navy had to give up several standard contractual rights to which it would have been entitled had a directive been issued under the Defense Production Act.

This case drew considerable congressional interest. Subsequent to my testimony, on May 7, 1968, the Commerce Department sent the chairman of the House Banking and Currency Committee, Representative Wright Patman, a three-page apologia rationalizing its actions. This letter, written by a high official of the Department, is another example of the industry viewpoint in Government. The official stated his interpretation of the Defense Production Act as follows:

"It was not the intent of the Congress in enacting the priorities powers to create in the executive branch the power by regulation or directive thereunder to compel a private manufacturer to accept and perform a Government contract upon the Government's own specified terms."

His letter was forwarded to the Atomic Energy Commission for comments—which I provided. I wrote:

"It is my understanding that the intent and purpose of the Defense Production Act is to insure that the Government can obain defense equipment from contractors capable of producing such equipment despite any preference they might have for nondefense work. The act is worthless if prior agreement from a contractor is a prerequisite to directing his acceptance and performance of defense work under the Defense Production Act."

Chairman PROXMIRE. I would like the staff to get copies of this correspondence for the record.

(Materials referred to follow:)

U. S. DEPARTMENT OF COMMERCE,
BUSINESS AND DEFENSE SERVICES ADMINISTRATION,
Washington, D. C., May 7, 1968.

Hon. WRIGHT PATMAN,
Chairman, Committee on Banking and Currency,
House of Representatives,
Washington, D.C.

DEAR MR. CHAIRMAN: I appreciated the opportunity of appearing before the Committee on Banking and Currency on April 10, 1968 in connection with its consideration of H.R. 15683, a bill to renew the Defense Production Act, as amended.

During the course of my testimony I stated that: "* * * there have been no serious examples of rejection of a rated order when the rated order is placed properly and the company accepting it or to which the order is directed has the capability of producing the order in the time frame needed * * *"

According to the hearing transcript a later witness criticized this Department's exercise of the priorities powers under Title I of the Defense Production Act in connection with certain cases submitted to this Agency for directive or other action. This criticism impels me to offer a few further observations on these particular cases and in general on the matters which were the subject of criticism.

It was not the intent of the Congress in enacting the priorities powers to create in the Executive Branch the power by regulation or directive thereunder to compel a private manufacturer to accept and perform a government contract upon the government's own specified terms. Such action would amount to a taking of property which might have been appropriate, if at all, under Title II of the Act (Requisition and Condemnation), which, however, was terminated by the Congress in 1953.

As the agency to which responsibility for the exercise of these powers is delegated by the President, we have consistently as a matter of sound administration sought to avoid the issuance of a directive seeking to compel performance of a defense contract by a person whom we felt to be physically incapable of fulfilling its requirements. We see little advantage in a vain directive. We concluded that such was the case in the Contractor A situation only after repeated conferences with representatives of both the Navy and the company, and upon written documentation of their respective positions. [Doubt as to that company's capability of timely performance of the Navy's contract requirements because of the highly technical and difficult problems involved was well founded. The chronology published at page 130 of the Committee's Hearings indicates that efforts to negotiate for the performance of the development and design work involved had been a matter of protracted discussion between the Navy, its prime contractor (Contractor B) and various possible subcontractors. (Contractor C and Contractor A, and perhaps others) commencing as early as November 1965. This was some 16 months before the Navy even sought to invoke priorities assistance to meet its requirements.]

The assertion at page 96 of the Hearings that priority assistance in most instances consists of the issuance by BDSA of a directive to the supplier, ignores the fact that the mandatory use of priorities is accepted by industry as a matter of routine com-

pliance with the BDSA regulations. These regulations require, at all levels—from the prime contractor to the most remote subcontractor or supplier—the prompt acceptance and performance of contracts or orders which are identified by a defense rating symbol. The system is self-administering and enjoys a high degree of acceptance and adherence by industry. In a limited number of cases, however, because of delays or other impediments caused by conflicting priority orders, production capacity problems, facility limitations, and other types of production bottlenecks, directives are resorted to by BDSA to supplement the effectiveness of the priorities system. Directives are issued only after full consultation with the parties affected, both government agencies and private suppliers.

At pages 96 and 97 of the Hearings it is stated that the Department of Commerce directed delivery of a reactor core component at a date later than that required by the prime contractor and later than that promised by the supplier. On August 22, 1967, in a letter to BDSA the Atomic Energy Commission requested that a directive be issued to the supplier involved, Contractor D. This letter transmitted a request for "Special Priorities Assistance on Form BDSAF–138 prepared by the prime contractor, Contractor E, which had been submitted to the Procurement Assistance and Mobilization Planning Branch, Division of Construction, U.S. Atomic Energy Commission. Section 8(a) of that form showed the shipment date required by the prime contractor as June 21, 1968. On August 23, 1967, in response to the Atomic Energy Commission request, BDSA issued a directive to the Contractor D directing the shipment of the specified reactor core component on or before June 21, 1968. The supplier accepted receipt of this directive on August 28, 1967, but did not indicate that he would be unable to meet the directed shipment date.

At no time did Contractor E or the AEC request BDSA to issue a directive requiring delivery of the item involved by April 14, 1968, nor was BDSA ever informed that the supplier's current delivery promise was June 14, 1968, as alleged on page 97 of the Hearings

On February 26, 1968, AEC informed BDSA by telephone that the supplier, Contractor D, had reported slippage in its production of the core component. BDSA immediately contacted the supplier and was informed that a delay of six weeks in delivery was anticipated because the company was exceeding its estimated machining time. This information was immediately reparted to AEC who requested the issuance of an amended directive calling for a change in the required delivery date from June 21 to August 3, 1968. Accordingly such an amended directive was issued on February 28, 1968.

On March 13, 1968, AEC requested BDSA to withdraw the amended directive because it had been informed that delivery closer to June 21, 1968, could be achieved by Contractor D by expanding its work week. Pursuant to this request, on March 14, 1968, BDSA cancelled the directive calling for delivery by August 3, 1968, and directed Contractor D to make shipment by June 21, 1968.

The foregoing is submitted to assist the Chairman and the Committee in evaluating the testimony presented at the April 10 and 11, 1968 Hearings.

Sincerely yours,

A. A. Bertsch
(S) A. A. Bertsch,
Assistant Administrator, Industrial Mobilization.

July 5, 1968.

Hon. Jack Brooks,
Chairman, Government Activities Subcommittee,
Government Operations Committee,
House of Representatives.

Dear Mr. Brooks: Your letter of May 23, 1968, forwarded a copy of Department of Commerce comments on Admiral Rickover's testimony of April 10, 1968, before the House Banking and Currency Committee. Since the points raised in the Department of Commerce letter relate to matters in which Admiral Rickover was directly involved, we requested his reactions to the Department's letter. Admiral Rickover's response to the issues raised by the Department of Commerce is attached.

The facts involved in the two situations described by Admiral Rickover in his testimoney on April 10, 1968, appear to us to be the types of procurement actions in connection with which the authority to compel acceptance by contractors properly should have been exercised.

We shall be pleased to make available any further information you may require.

Sincerely,

E. J. Bloch,
Deputy General Manager.

Memorandum

June 28, 1968.

To: R. E. Hollingsworth, General Manager.
From: H. G. Rickover, Director, Division of Naval Reactors.
Subject: Comments on Department of Commerce letter concerning administration of the Defense Production Act.
Symbol: NR:D:HGRickover H# 7011.

In a letter dated May 23, 1968, to the Deputy Controller, Congressman Jack Brooks requested comments on a May 7, 1968 letter from the Business and Defense Services Administration (BDSA) of the Department of Commerce to the Chairman of the House Banking and Currency Committee. The Department of Commerce letter takes issue with my testimony before the House Banking and Currency Committee with respect to the manner in which the Defense Production Act is being administered.

I testified that with regard to Naval Reactors programs, the manner in which the Defense Production Act and its implementing regulations have been applied by the Department of Commerce has been of little, if any, help to me. In fact, I noted in my testimony, in some instances, Department of Commerce "help" has been detrimental to programs for which I am responsible.

In commenting on my testimony, the Department of Commerce letter includes statements that are factually incorrect, along with statements that were apparently intended to justify their action, or lack of action, in connection with two cases involving the Naval Reactors Program discussed in my testimony.

Since their uncorrected statements contradict my testimony, I request that my comments on the letter be included in the AEC's reply to Congressman Brooks and that a copy of the AEC reply be sent to the Chairman of the House Banking and Currency Committee.

My comments are as follows:

"a. *Department of Commerce criticism of my testimony regarding their failure to assist the Navy in obtaining equipment for a new design submarine.*"

The Department of Commerce letter states:

> "It was not the intent of the Congress in enacting the priorities powers to create in the Executive Branch the power by regulation or directive thereunder to compel a private manufacturer to accept and perform a Government contract upon the Government's own specified terms."

It is true that Congress apparently did not intend to permit the Government arbitrarily to dictate its own terms and conditions for performance of an order under the Defense Production Act. However, Congress also emphasized that vendors were not to be permitted to discriminate against defense orders by imposing different terms and conditions from those normally used for generally comparable orders and contracts. (See Section 707 of the Act and BDSA Reg. 2 Sect. 10.) The fact is, the terms and conditions of the proposed contract were not in issue during the time when we were seeking Department of Commerce assistance. The Navy did not insist that the manufacturer accept the Government's own terms. The Navy's sole, urgent purpose was to get the supplier to agree to undertake the work and to start performance as soon as possible. The Navy was willing to, and later did, make a general, letter-type contract which left the detailed terms and conditions to be negotiated between the parties. The Navy was also willing to place the order on the basis of the supplier's "regularly established price and terms of sale" for the equipment involved—as contemplated by the regulatory requirements of the Business and Defense Services Administration of the Department of Commerce.

As it developed, since the Department of Commerce would not assist the Navy by issuing a directive to perform the urgently needed work, the Navy was compelled to accept less favorable terms and conditions than customarily used in comparable procurements from the manufacturer in order to obtain its agreement to undertake the work. These terms and conditions were discriminatorily adverse to the Government's interests. Thus, what I believe to be the truly essential underlying intent of Congress in enacting the Defense Production Act was substantially thwarted; that intent was, I believe, accurately portrayed in the following passage from Report No. 1455, dated May 23, 1968, of the House Banking and Currency Committee:

> "The priorities and allocations authority of Title I is intended to assure that materials and equipment are available at the time and place they are needed to meet military and other essential production. The system is supposed to assure that defense orders

take priority over performance under any other contract or order. This authority also intended to assure that essential production orders are filled promptly, including the extensive research and development activities of the Department of Defense, the Atomic Energy Commission, and the National Aeronautics and Space Administration."

The Department of Commerce letter states:

"* * * we have consistently as a matter of sound administration sought to avoid the issuance of a directive seeking to compel performance of a defense contract by a person whom we felt to be physically incapable of fulfilling its requirements. We see little advantage in a vain directive. We concluded that such was the case in the Contractor A situation only after repeated conferences with representatives of both the Navy and the Company, and upon written documentation of their respective positions. Doubt as to that company's capability of timely performance of the Navy's contract requirements because of the highly technical and difficult problems involved was well founded. The chronology published at page 130 of the Committee's Hearings indicates that efforts to negotiate for the performance of the development and design work involved had been a matter of protracted discussion between the Navy, its prime contractor (Contractor B) and various possible subcontractors, (Contractor C and Contractor A, and perhaps others) commencing as early as November 1965. This was some 16 months before the Navy even sought to invoke priorities assistance to meet its requirements."

A chronology of events leading to the Navy's March 30, 1967 request for Department of Commerce assistance may be summarized briefly as follows:

In November 1965, the Navy's prime contractor, Contractor B, requested proposals from both Contractor A and Contractor C to conduct design studies for the main propulsion equipment and ship's service turbine generators for a new submarine. The equipment was to be similar in design to equipment previously developed for the Navy by Contractor A.

In December, 1965, Contractor A replied that they were unable to quote on the work because of prior technical commitments and that a minimum of one year would be required before they would be in a position to do so. Further, Contractor A stated they would be willing to undertake this work *only* if they were the only logical manufacturer and if there were some material urgency for this equipment. Since Contractor C was willing to perform the work, Contractor B contracted for the initial design studies with that company. These studies were completed in a timely manner on February 4, 1967.

Thus, up to this time there was no issue with Contractor A.

On February 9, 1967, Contractor B requested bids from Contractor A and Contractor C for the design and manufacture of the equipment needed for this project.

On March 3, 1967, Contractor A notified Contractor B that they would not be submitting a proposal on this equipment because of a lack of technical manpower.

On March 6, 1967, Contractor C advised Contractor B that they could not submit a proposal to provide the ship's service turbine generators because of lack of sufficient technical information. As stated above, the basic design of these units was developed originally by Contractor A for another Navy project.

During the period March 8–14, 1967, during various telegraphic and telephonic exchanges between Contractor B and Contractor A officials, and between Navy and Contractor A officials, Contractor A stated on four separate occasions that they would not bid on the Contractor B proposal.

On March 17, 1967, Contractor B officially requested Government assistance in obtaining propulsion plant equipment for this project.

On March 20, 1967, the Navy concluded that Contractor A was the only supplier that could provide the equipment to meet its requirements.

On March 30, 1967, the Chief of Naval Material forwarded Contractor B's request for Government assistance to the Department of Commerce.

The above chronology shows that actually less than one month elapsed between Contractor A's refusal to bid on March 3, 1967, and Navy's official request to Commerce on March 30, 1967, for priority assistance. During those 27 days strenuous but unsuccessful efforts were made both by Contractor B and Navy officials to persuade Contractor A to reconsider its declination to bid. Thus, it is obvious that the Navy did not delay 16 months in requesting priority assistance, as implied in the Department of Commerce letter. On the contrary, the Navy moved with dispatch befitting the increasing urgency of the situation in seeking such assistance.

The Department of Commerce letter of May 7, 1968 indicates that issuing a directive to Contractor A in this case would have been in vain because Contractor A was physically incapable of fulfilling the Navy's requirements. However, in my view, the facts did not and do not support the Department of Commerce conclusions that Contractor A was incapable of fulfilling the Navy's requirements.

As reasons for its refusal to accept an order, on May 8, 1967 Contractor A wrote the Department of Commerce stating that at least two technical breakthroughs were required for successful completion of this project and that, because of a shortage of qualified engineers, they would not be in a position to review the design specifications until about April 1968—about a year later than the Navy requested. The Navy did not agree with Contractor A that any "technical breakthroughs" were required, nor that Contractor A could not make available sufficient qualified engineers for this work.

To clear up any questions regarding the need for "technical breakthroughs", a meeting was held on May 23, 1967 among technical personnel from Contractor B, the Navy, Contractor A, *representatives of the Department of Commerce* and the staff of the Joint Committee on Atomic Energy. At this meeting, Contractor A withdrew their statement that "technical breakthroughs" were required and stated that Contractor A did not question and had never intended to question the basic technical feasibility of the job. This is reflected in the minutes of this meeting which were issued by the Department of

Commerce on June 8, 1967 to participants of the May 23 meeting. Thus there was no basis on technical grounds for the Department of Commerce to refuse to issue a directive.

With regard to the availability of qualified engineering personnel to perform the job, the Navy, in a letter dated April 28, 1967, pointed out to the Department of Commerce that the engineering work related to this equipment was estimated to comprise only about 10 to 15 percent of the total price and that it was inconceivable that Contractor A, one of the Nation's largest defense contractors could not provide the modest technical resources needed. This job involved a fraction of one percent of its total annual business. Contractor A has thousands of engineers. Only about 10 to 15 engineers were required for this job. At the very same time Contractor A was telling the Department of Commerce that they did not have the necessary engineers, Navy personnel found that engineers experienced in this type of Navy work were listed in the firm's telephone directory as being assigned to commercial work.

In August 1967, the Navy was finally able to obtain a contract with Contractor A. Once Contractor A agreed to accept the order, they promptly assigned the necessary engineering personnel—about 9 months earlier than the date of April 1968, which the Department of Commerce previously accepted as the earliest feasible date. Had the Department of Commerce issued a directive in March 1967, as the Navy requested, work could have started immediately.

The Department of Commerce appears to interpret the Defense Production Act and its implementing regulations to require prior agreement from a contractor as a prerequisite to directing acceptance and performance of defense work under the provisions of the Act. I do not believe that Congress intended this to be the case. Rather, I believe that Congress intended that the Act provide authority for the Government to require contractors to accept and perform contracts for defense work even though the contractors would rather do commercial work.

The Navy never received an official response from the Department of Commerce to its request of March 30, 1967 and a later one, on April 28, 1967, for Department of Commerce assistance. The Department of Commerce letter of May 7, 1968 to the Chairman of the House Banking and Currency Committee is the first official statement of the Department of Commerce position I have seen. However, the reasons why the Department of Commerce would not issue a directive in this case are still not clear to me.

"b. *Department of Commerce criticism of my testimony with regard to their failure to assist the AEC in obtaining timely delivery of certain reactor core components.*"

The Department of Commerce letter comments on another case of their "non-assistance" cited in my testimony. Their letter states:

> "At no time did Contractor E or the AEC request BDSA to issue a directive requiring delivery of the item involved by April 14, 1968, nor was BDSA ever informed that the supplier's current delivery promise was June 14, 1968, as alleged on page 97 of the Hearings."

Our review indicates that, contrary to the statement of the Department of Commerce, Contractor E did submit a request for priority assistance which indicated the supplier's shipment promise of June 14, 1968. This request was forwarded through channels to the

Atomic Energy Commission on August 15, 1967. On August 21, 1967, the Atomic Energy Commission advised the Department of Commerce of the required date of April 15, 1968, and of the supplier's delivery promise of June 14, 1968. After a telephone discussion with the supplier, the Department of Commerce advised the Atomic Energy Commission that a June 21, 1968 delivery was the earliest date the supplier would accept in a directive. Based on the Department of Commerce determination that June 21, 1968 was the earliest delivery date which the supplier would accept in a directive, the Atomic Energy Commission, on August 22, 1967, revised the requested date to June 21, 1968 and submitted a formal request to the Department of Commerce for issuance of the directive. This case again points up their practice of obtaining the contractor's acquiescence as a condition precedent to issuance of a directive under the Defense Production Act.

The Department of Commerce letter states:

> "The assertion at page 96 of the Hearings that priority assistance in most instances consists of the issuance by BDSA of a directive to the supplier, ignores the fact that the mandatory use of priorities is accepted by industry as a matter of routine compliance with the BDSA regulations. These regulations require, at all levels—from the prime contractor to the most remote subcontractor or supplier—the prompt acceptance and performance of contracts or orders which are identified by a defense rating symbol. The system is self-administering and enjoys a high degree of acceptance and adherence by industry."

This statement sums up quite well a point I made in testimony to the House Banking and Currency Committee. The Defense Material Priorities System does certainly appear to be "self-administering."

A Department of Commerce publication entitled "Keeping Defense Programs on Schedule", 1961, reprinted 1966, at page 28, states that the "directive" feature is intended as a mandatory priority mechanism to be used in circumstances where the so-called "self-administering" aspects of the priorities program do not accomplish the desired results. My experiences is that the Department of Commerce will not issue a directive without the contractor's prior agreement. Thus, by their practices, including their measures to avoid "vain directives," the Department of Commerce avoids any difficulties with industry, but provides virtually no assistance to the Government agency requesting help within the spirit of the Defense Production Act. This, in my opinion, is the reason for the "high degree of acceptance" by industry.

I can speak only from my own experience—I do not speak for others. My experience is that the Department of Commerce is unwilling or unable to use the authority Congress provided them in the Defense Production Act. In my opinion and based on my experience with the way the Department of Commerce is administering the Act, the Government is no better off than if there were no Act. It is not clear to me whether the Department of Commerce represents industry to the Government or the Government to industry.

I appreciate very much the opportunity to review the Department of Commerce letter of May 7, 1968. In my judgment it fully supports my testimony regarding their lack of help to my program in administering the Defense Production Act.

H. G. RICKOVER.

(End of inserted material.)

GOVERNMENT OFFICIALS SWAYED BY INDUSTRY

Chairman PROXMIRE. In your opinion, Admiral, why are these officials unwilling to use the authority of the Defense Production Act?

Admiral RICKOVER. Government officials have been swayed by industry, Mr. Chairman. In this case, the manufacturer convinced them that the private interests of his company were more important than our national defense requirements. Men constantly seek maximum realization of their interests by means of maximum utilization of their powers. Manufacturers and their advisory groups can be very persuasive. They have sold many Government agencies on the idea that the prerogatives of industry must be preserved. This explains why high-ranking Government officials often seem more interested in placating industry than they are in protecting the Government's rights. This is evident in the way new policies are implemented. The Department of Defense tends to trade away something for each new procurement policy it implements. Its preoccupation appears to be in making the policy palatable to industry.

For example, last year the Department of Defense announced it would obtain contractual rights to audit suppliers' books during and after completion of a contract. This could have been a valuable tool for contracting officers to use in checking actual profits and costs on defense contracts. Such information would have been useful for negotiating costs and profits on later contracts. However, a most high official in the Office of the Secretary of Defense ruled out this possibility in a letter to the Army, Navy, and Air Force. The letter said, in part:

"I wish to make it clear that the purpose of any postaward cost performance audit, as provided herein, is limited to the single purpose of determining whether or not defective cost or pricing data were submitted. Access to a contractor's records shall not be for the purpose of evaluating profit-cost relationships, nor shall any repricing of such contracts be made because the realized profit was greater than was forecast, or because some contingency cited by the contractor in his submission failed to materialize—unless the audit reveals that the cost and pricing data certified by the contractor were, in fact, defective."

Copies of this letter were distributed to contractors. In my opinion, the Department of Defense, by this action, gave away a fundamental right the Government should have retained. In the very nature of things, bureaucratic policies run where preferences lead.

The feeling of responsibility for the welfare of industry shows up in other ways, too. I believe it is caused to a large extent by the influence of industry advisory committees, lobbyists, and former industry officials who, although they have taken positions in Government, nevertheless, retain an industry viewpoint. The bargaining between the Department of Defense and industry representatives in establishing Government procurement policies often requires the Government to accept less than it should in order to obtain industry agreement with the Government policy.

When the Department of Defense decides to make a change in the Armed Services Procurement Regulation, it conducts a prior check with industry to make sure that the change does not impinge too greatly on the latter. Sometimes it sends proposed changes to manu-

facturers and advisory groups for comments. This leads to a situation in which the Department of Defense negotiates with private industry over each of its own regulations.

In the case I just mentioned, the Department of Commerce chose to negotiate with the firm rather than exercise its legal authority, even when it had become obvious the firm was unwilling to negotiate.

Whatever legislation may be enacted as a result of these hearings, the authority should not go to the Department of Commerce. That Department is an industry-promotion agency. Dealing with it is, as President Kennedy said of the State Department, like dealing with a foreign power.

The General Accounting Office and now the Department of Defense have authority to examine contractors' books and records. However, when you mention a study of profits on defense contracts, both agencies turn to non-Government groups to collect the information so that industry will not be offended.

Another reason for the protective attitude toward industry simply arises from familiarity. Harold Nicolson in *Peacemaking 1919* points out the danger of familiarity in his vivid description of the negotiations at Paris leading to the Treaty of Versailles:

"* * * Nothing could be more fatal than the habit (the at present persistent and pernicious habit) of personal contact between the Statesmen of the World. It is argued, in defence of this pastime, that the Foreign Secretaries of the Nations 'get to know each other'. This is an extremely dangerous cognisance. Personal contact breeds, inevitably, personal acquaintance, and that, in its turn, leads in many cases to friendliness: there is nothing more damaging to precision in international relations than friendliness between the Contracting Parties. Locarno, not to mention Thoiry, should have convinced us of the desirability of keeping our statesmen segregated, immune and mutually detached. This is no mere paradox. Diplomacy is the art of negotiating *documents* in a ratifiable and therefore dependable form. It is by no means the art of conversation. The affability inseparable from any conversation between Foreign Ministers produces allusiveness, compromises, and high intentions. Diplomacy, if it is ever to be effective, should be a disagreeable business. * * *"

What he said about the danger of familiarity among statesmen is equally true about those in Government who buy and those in industry who sell.

You know how it is in the State Department. They have what they call "country" desks. Pretty soon the official in charge of the Lilliputian desk or the Brobdingnagian desk begins to feel that he is responsible for the welfare of "his" country. I have no doubt that some of our give-away programs have had their inception in this feeling by "desk" officers. Instead of constantly bearing in mind that his sole function is to take care of the interests of the United States, he instead becomes a judge, seeing to it that justice prevails between the United States and "his" country. And when one becomes a judge he no longer is answerable to any earthly authority; he is answerable only to God.

INDUSTRY WANTS TO NATIONALIZE LOSSES BUT PRIVATIZE GAINS

Industry would very much like to nationalize its losses and privatize its gains. Every major company has a staff of highly trained, well-paid officials to represent it to the Government. Industrial firms retain contracting officials and lawyers whose sole job is to see that the company is granted every conceivable advantage from the Government. They have set up advisory groups and lobbies to give themselves a say in the making of Government policies. Thus, executives and advisers, lawyers and lobbies are protecting industry quite adequately. They need no assistance from Government officials. Rather, Government officials should be concerned with protecting the *Government* and the people.

It is here apropos to contrast the expertise and rationality of business when it does its own purchasing as compared with the obfuscation that often surrounds their decisions and actions relating to those who purchase from them.

You will remember that in 1913, Woodrow Wilson said Washington was so full of lobbyists that "a brick couldn't be thrown without hitting one of them." He added:

"It is of serious interest to the country that the people at large should have no lobby and be voiceless in these matters, while great bodies of astute men seek to create an artificial opinion and to overcome the interests of the public for their private profit. It is thoroughly worth the while of the people of this country to take knowledge of this matter. Only public opinion can check and destroy it.

"The Government in all its branches ought to be relieved from this intolerable burden and this constant interruption to the calm progress of debate. I know that in this I am speaking for the Members of the two Houses, who would rejoice as much as I would, to be released from this unbearable situation."

The situation today is no different. Congress must remain ever alert to protect the public from pressure groups that would act counter to the public interest.

PROTECTION AND ENCOURAGEMENT FOR GOVERNMENT PERSONNEL

Chairman PROXMIRE. What we are trying to do is to make it so that the cards are not stacked against these governmental purchasing agents. One of the most useful bits of testimony we had in all these hearings was from Mr. Beusking and Mr. Fitzgerald on the difficulty of providing protection and encouragement for people who will do a good job of trying to keep contractors' costs down. It is difficult to do it. As Mr. Fitzgerald put it, it is "antisocial" behavior and it is behavior that often results, as they both testified, with people not staying in the Pentagon very long. Mr. Fitzgerald did testify that the Air Force is now trying to work out a method of protecting these people and giving them some kind of encouragement from the Secretary of the Air Force and so forth, but we haven't had a chance to see whether this is going to be effective or not. It seems to me this is something that is well worth recognizing, and if you have any views in this area I would appreciate hearing them.

Admiral RICKOVER. I believe you will find, Mr. Chairman, that top management in the Department of Defense does protect and encourage subordinates—as long as they hew to the party line.

Chairman PROXMIRE. Let me ask about the difficulty of talking out. The Congress and the people deserve and should have the facts on this kind of thing as frankly as possible. Yesterday we had a case where I had requested Mr. Fitzgerald to provide a statement for the committee; he failed to do it. He told us that he was ordered not to do it, and I am deeply concerned about this. I think that if we do not have an opportunity to determine what the experts in the Pentagon think about this, and what their information is, it means that the democratic process just isn't working. I would like to get from you, Admiral Rickover, what you think about the difficulty of speaking out.

Admiral RICKOVER. It is not difficult to speak out in the Department of Defense. It is not difficult at all for a military person to speak out, provided he is prepared the next day to receive orders to a duty station 12,500 miles from Washington.

CONGRESS CAN CHAMPION THOSE WHO SPEAK OUT

Chairman PROXMIRE. What can Congress do?

Admiral RICKOVER. In obvious cases, Congress can champion unpopular critics. You are familiar with my own case; had it not been for Congress I would have been out of the Navy many years ago.

Similarly, I think Mr. Fitzgerald will be protected from any repercussions for testifying against the wishes of the Department of Defense. Since you have exposed the attempt to stop Mr. Fitzgerald, he is in the public eye for the time being and many will be watching for evidence of reprisal.

The problem is that not every knowledgeable subordinate in the Department of Defense has the opportunity to present his views before a congressional committee. For many imaginative people in the Defense Department and the three services, the only forum for new ideas is the Pentagon's chain of command. The working-level person who develops a new proposal must send it through innumerable strata of reviewing authorities. There may be 15 or more tiers of administrators separating him from the Secretary of Defense. This means that 15 groups must all approve his suggestions, but any one of the "decision-makers" can summarily dismiss it.

Therefore, anything Congress can do to require the Department of Defense to thin out its thicket of "managers" would enhance the condition of working level people throughout the Defense Establishment.

Chairman PROXMIRE. I am interested to hear you say this, Admiral, because I am concerned about the tendency of the Department of Defense—and some other executive agencies—to suppress information that might show them in a bad light.

Admiral RICKOVER. Mr. Chairman, a thought has just struck my mind that might have some relevance here. Congress is the only body which has the power and willingness to obtain all of the information not otherwise available to the public; where public issues can be fully illuminated; where the interests of the American people can be properly protected.

Today this congressional committee is inquiring into the activities of the most powerful arm of the executive branch. At this hearing, as well as at other congressional hearings, it is possible for citizens of our country to speak out publicly, to express views on how the Govern-

ment is conducting its affairs—even a military man such as myself is able to critically discuss his own department, his own superiors. What more is needed as a living demonstration of the glory of our form of government, of its resiliency, of the faith we have that wrongs can be corrected, that even the most powerful individuals in our Government can be called to account by the representatives of our people? Where else besides the United States and a handful of other countries is this possible?

In ancient times the proud boast *some* men could make was "*civitas Romanus sum*"—it was at that time the apogee of personal political privilege to be a Roman citizen. I submit it is a far greater privilege to be an American citizen. We have done something more admirable than admit into our polity everyone living and working in this country. We permit *every* American to judge his Government.

I just wanted to say that I am proud to be here, proud to be allowed to participate in my Government, proud that in my country no man can be truly silenced if he desires to speak out. This is, perhaps, the greatest privilege of American citizenship.

We have all heard of cases where Government personnel were apparently "punished" for speaking out against the policies of their superiors. I do not mean the spectacular punishments that might be meted out to a dissenter in other countries; but there are subtle methods of reprisal that have been brought to bear against subordinates who publicly refuse to toe the agency line.

I think it would be wise for those who would "punish" their subordinates in this way to remember that they themselves have the same privilege; they themselves are protected from injury in the same manner as is the lowliest witness. While they might protect themselves from the embarrassment of criticism by silencing a critic, they will be contributing to the erosion of a privilege that is the birthright of every American.

Chairman PROXMIRE. I wish to thank you, Admiral, for the thoughtful remarks you just made. I share your views. Those who would lightly change our system of government because of an occasional lapse should bear in mind that the liberty we now hold was not easily won by our forebears; it cost countless lives and great hardships and devastation.

CONGRESS MUST TAKE THE LEAD IN CORRECTING CONTRACTING DEFICIENCIES

Chairman PROXMIRE. Admiral, you stated that Congress will have to take the lead in improving Department of Defense procurement procedures.

Admiral RICKOVER. Yes, sir. Leadership of the type being practiced is not leading to solutions of problems: there are only responses. My experience is that you, the Congress, will have to force the issue. The Department of Defense will not. They have a fixed opinion on every subject and insist at all costs that they are right—even at the cost of being wrong. It has never occurred to them to say that they were unsure or even perhaps they didn't know. To have done so, I suppose, might have been taken as a sign of weakness.

The General Accounting Office will not. Industry will not, because it is not to its advantage to do so.

I know that Congress has attempted to help the executive branch do its job by providing the legal authority to protect the Government's interests through legislation—through the Armed Services Procurement Act, the Defense Production Act, the Renegotiation Act, the Truth-in-Negotiations Act—all of which are designed to help the military get its job done in an economical manner.

It has been my experience, unfortunately, that those in positions of power do not take the initiative to correct obvious deficiencies. They become protective of the status quo. They appear unwilling to use the authority Congress has provided them. That is why I am convinced that if anything is to be done about this matter, Congress will have to do it.

Each year since 1963, in testimony before the House Appropriations and other committees, I have given my views on how Government contracting might be improved based on what I have observed in conducting the naval nuclear propulsion program. Each year I pointed out specific deficiencies in defense procurement and have made specific recommendations for improving these procurement practices. But my statements are like hammers with no anvil, since the Department of Defense does not respond. It seems to believe I have no business criticizing its contracting or other practices—that if any criticism is warranted it will come from its own officials whose job descriptions require them to take care of such matters.

On occasion, the Department of Defense has disagreed publicly with my testimony. For example, in 1963 I testified to the House Appropriations Committee that I thought profits of large defense contractors were fairly high despite what might be heard to the contrary. In response, the Department issued a press release stating that I was "sailing on the wrong tack" and indicating that I did not know what I was talking about.

At House Appropriations Committee hearings this year, I again testified that defense profits may be too high. I cited specific examples and numerous indications which led me to that conclusion. I recommended that uniform accounting standards be established for all defense contracts. Following my testimony, legislation was introduced calling for a General Accounting Office study to establish uniform accounting standards.

On June 17, 1968, 6 weeks after my appearance before the House Appropriations Committee, the Department issued a public statement announcing they had found no basis for concluding that defense profits were too high; in fact, it again expressed concern over the "downward trend" in defense profits. On the same day, the Department of Defense, in a letter made public by the Senate Banking and Currency Committee, opposed the proposed study to establish uniform standards of accounting for defense contracts.

The letter stating that there was no basis for concluding defense profits to be too high was widely disseminated to industry by means of a Defense procurement circular—so that contractors would know where the Department stood on this issue. The letter was also published in the Defense Management Journal for the Department of Defense cost reduction and management improvement programs, which also receives wide distribution throughout Government and industry.

Mr. Chairman, on July 18, 1968, you wrote to the Department of Defense, pointing out that the profit data cited by the Department of

Defense in their letter was unreliable. You asked the Department to establish a system to find out what profits really are. That, in my opinion, is exactly what is needed. However, Mr. Chairman, and with due respect to you, I must say to you that your public relations program is not as persuasive as that of the Department of Defense. You do not have as many minnesingers to chant your praises. "Whose bread I eat, his song I sing." Your letter was not printed in the Defense procurement circular or in their Cost Reduction Journal. I suggest you ask for equal space so that the readership can become equally aware of your concern in the matter.

Chairman PROXMIRE. You have a point there, Admiral.

DEFENSE DEPARTMENT MEDIA REFLECT INDUSTRY VIEWPOINT

Admiral RICKOVER. Their use of these media for propaganda purposes contributes to the industry attitude of contracting officers throughout the Department. They hear the industry propaganda at the negotiation table and then read the same story from their Defense superiors in the house-organ literature. I doubt they ever hear the other side of the argument. They must feel that since the Department of Defense and the contractors hew to the same party line, it must, by dint of repetition, be true.

In the United States, the prestigious word "image" has now achieved eminence. Every Government organization conceives it to be fashionable and in accordance with the latest concept of "management" to create an "image" for itself. This is why Federal agencies need such huge public relations staffs, and why they keep on grinding out propaganda. The news media can be friendly one moment and hostile the next. The job of a public relations staff therefore is to put its agency's best foot forward. Their job, as far as they can, is to present to the public only the information favorable to their side. Have you ever seen a press release by a Government agency that was actually critical of itself—that did not resort to delicate wording intended to blunt the actual situation?

The Department of Defense has shown almost unlimited capacity for absorbing protest and externalizing blame, for confusing and dividing the opposition, for "seeming" to appear responsive to legitimate protest by issuing sophisticated and progressive statements and studies that are poorly implemented, if at all.

COST-REDUCTION MEASURES MAY BE FALSE ECONOMY

The Department of Defense apparently believes that the solution to poor procurement practices is good public relations. When criticized, it usually responds with a press release, denying anything wrong and stating how much money has been saved through its vaunted cost-reduction program. Their words on saving money always sound splendid in speeches and public relations documents, and in house organs, but how much reality do they have?

I see the other side of the story. I will give you an example. The Department of Defense claims large cost savings through reduction of inventories. It claims to have eliminated large excesses of stocks on hand, and claims that the inventories are now managed on the basis of "cost effectiveness."

However, the past several years I have received an increasing number of complaints from ships telling me of difficulties encountered in obtaining parts and equipment from the supply system. Looking into this, I found that supply effectiveness for most repair parts required to support shipboard mechanical and electrical equipment has been reduced from about 90 percent several years ago to about 60 percent today. This means that for every 100 requests for parts that come in from the fleet for repair parts and equipment, 40 cannot be filled from stock. It appears the primary reason for this reduced supply effectiveness is the Department of Defense decision to reduce the amount of funds for spare parts.

Lower investment in inventory sounds like a fine idea. In fact, it may be false economy. Savings in inventory can be more than offset by higher costs to purchase needed parts on a crash basis.

It has been estimated that hurried "spot buys" of repair parts cost the taxpayer about 25 percent more on the average than a normal competitive procurement of the same item for stock. Sometimes the item simply cannot be obtained when needed.

I find that under present Department of Defense policies, 25 percent of the Navy's operating ships have equipment out of order which reduces their capabilities. Availability of required parts is quite often the limiting factor in restoring this equipment to service. Thus, we may pay more in the long run, and have less effective weapons when equipment is out of commission for lack of spare parts.

A similar problem exists in the manner the Department of Defense manages its weapon acquisition programs. Its financial and systems analysis personnel have caused significant program delays and cost increases by their decisions to suspend or to defer weapons programs in order to conduct cost effectiveness studies.

The Russians do not appear to have this problem. Once they reach technical decisions, their programs are carried out without administrative disruption. Their programs are not subjected to constant reanalysis and rejustification on grounds of cost effectiveness. It is high time that we recognize the consequences of unwarranted delays in technical programs. In the Department of Defense, administrators and systems analysts hold up funds specifically appropriated by Congress for important military projects while they study and restudy the project. They are attracted to studies like mice to a granary. The Navy has been particularly plagued by decisions to delay the nuclear shipbuilding program and by the ensuing studies and counterstudies that have now become a way of life. However, the problem is not unique to my own program.

The Department of Defense decisions are nearly always tentative; they analyze and decide—then reevaluate, redecide, on and on. The military services are required to respond with their own studies at the expense of their primary functions. It is like being required to compose a sonnet while fighting a duel.

Their myriad administrators have assumed great powers, and powers once acquired are seldom relinquished. "No winter shall abate this spring's increase."

Their decisionmakers have generally tended to follow the advice of young economists with their magnificent theories which reduce the complexity of the real world to the simplicity of a model. The concept appears to be that military matters are simple matters which can

be learned easily by any college freshman. I regret to say that some of the Department of Defense cost-effectiveness decisions made in recent years smack of this sort of "sheepskin economics." The military is thought of as a bunch of unimaginative cowboys. It may be that our military leaders do not have accurate foresight but the actions of the cost effectiveness analysts have demonstrated that they have none at all.

Take the case of nuclear-powered naval ships. The Department of Defense has constantly criticized their high cost. But decisions, or lack of decisions by the Defense Department have delayed and interrupted nuclear shipbuilding programs—a significant factor in the cost increase. You cannot start a program, then stop it or delay it, and then resume it without incurring additional costs. Those who make administrative decisions which lead to program interruptions and in lengthy delays in releasing appropriated funds must bear much of the responsibility for cost increases and program delays resulting from such decisions.

It is of course possible for those with original imaginations to discuss highly complex matters intelligently with each other, but administrators and systems analysts should not pretend to understand every mystery of science and engineering; they should act as administrators.

They consider engineering, in particular, rather vulgar, as sort of plumberlike and unimaginative—the domain of technicians. Therefore engineering problems can be readily resolved by anyone in authority; it is their right to debate it, sit in judgment, lay down the law, while others do the work. They think it is simply a matter of sitting at the center of an information web and, on the strength of bits of data collected by others, acquiring superior capacity to judge and direct complex technical processes.

To see the absurdity of this assumption one has but to translate it into the parallel where an administrator with no medical education sits in judgment and lays down the law to a surgical team. Let me assure you that the technical expertise required of a nuclear submarine designer is every bit as closed to the lay mind as is surgery.

Despite all the new systems analysis, computer techniques, game theories, and alleged sociological "scientific insight," the kind of expertise which only the professional man with long experience possesses is still required. For all the world, what the current situation reminds me of most is the concept of hereditary monarchs, that they had some divine capacity to rule on every matter within their realm.

Chairman PROXMIRE. I understand that recently in testimony before the Joint Committee on Atomic Energy, you responded at length to questions concerning the reasons for this problem in the Department of Defense.

Admiral RICKOVER. Yes, sir. In the July 25, 1968, hearings concerning advanced design submarines.

Senator PROXMIRE. I would like to ask the staff to insert in the record the questions Admiral Rickover was asked and the answers he gave.

(The information follows:)

Question: As you know, the committee is deeply concerned about the way the Department of Defense delayed the high-speed submarine and is delaying the electric drive submarine. Would you provide the committee with your views to why this is happening?

Answer: I have given this much thought over the past several years and I have expressed my ideas at length before committees of Congress [1]—this committee, the House Armed Services Committee, the Senate Preparedness Subcommittee, the House Appropriations Committee, and most recently the Senate Foreign Relations Committee. If I talk about a matter not within my assigned area of responsibility, this should be attributed to affection for my country rather than presumption.

What is basically wrong with the Defense Department, in my opinion, is the excessive size of its headquarters, its civilian general staff, which has grown at such a prodigious rate in the last 8 years that it has now reached what in an atomic bomb is called a "critical mass." As you know, when a critical mass is reached, the bomb "take off"; it is out of control. The DOD headquarters staff has become so vast that it has gone out of control of its own leaders.

There are so many layers of administrators that they constitute a thicket impeding action on vital matters for which DOD approval must be obtained. At numerous points there are barriers—often manned by relatively minor administrators—which check progress. In consequence, almost nothing can now be decided without inordinate delay. It is bad enough to make wrong decisions but infinitely worse to make none at all—as happened with the aircraft carrier *John F. Kennedy*. By simply refusing to act on the request of the Armed Forces and of Congress that the carrier be nuclear powered, the civilian general staff killed the project and got its wish to have it powered by conventional fuel. Currently, the building of the electric drive submarine is being held up possibly with the hope for the same result. This is a dangerous game. Our enemies will not politely hold their hand while still another study is made by the Defense Department.

Obsessed with the fallacy that the decisionmaking process can be made "scientific," the civilian general staff has built a complex apparatus for the evaluation of military hardware requested by the Armed Fores. The deciding criterion has been "cost-effectiveness," a

---

[1] Related testimony by Vice Admiral Rickover before various committees of Congress are—

1. Hearings before the Joint Committee on Atomic Energy:
   (*a*) June 21, 1968, nuclear submarines of advanced design.
   (*b*) Feb. 8, 1968, naval nuclear propulsion program, 1967–68.
   (*c*) Mar. 16, 1967, naval nuclear propulsion program, 1967–68.
   (*d*) Feb. 16, 1966, AEC authorizing legislation, fiscal year 1967.
   (*e*) Jan. 26, 1966, naval nuclear propulsion program.
   (*f*) Feb. 8, 1965, Mar. 18, 1965, Apr. 8, 1965, pts. 2 and 3, AEC authorizing legislation, fiscal year 1966.
2. Hearings before the Committee on Armed Services, House of Representatives:
   (*a*) June 13, 1968, No. 56, hearings on military posture, 1968.
   (*b*) Apr. 18, 1967, No. 8, hearings on military posture, 1967.
   (*c*) May 2, 1966, No. 64, hearings on military posture, 1966.
3. Hearings before the Preparedness Investigating Subcommittee of the Committee on Armed Services, U.S. Senate:
   (*a*) Mar. 13, 1968, U.S. submarine program.
4. Hearings before the Subcommittee on the Department of Defense of the Committee on Appropriations, House of Representatives:
   (*a*) May 1, 1968, pt. 6, Department of Defense appropriations for 1969.
   (*b*) May 1, 1967, pt. 6, Department of Defense appropriations for 1968.
   (*c*) May 11, 1966, pt. 6, Department of Defense appropriations for 1967.
   (*d*) May 12, 1965, Department of Defense appropriations for 1966.
5. Hearings before the Subcommittee on Public Works of the Committee on Appropriations, House of Representatives:
   (*a*) Apr. 24, 1968, pt. 3, public works appropriations for 1969.
   (*b*) Apr. 26, 1967, pt. 2, public works appropriations for 1968.
   (*c*) Apr. 20, 1966, pt. 2, public works appropriations for 1967.
   (*d*) May 5, 1965, pt. 3, public works appropriations for 1966.
6. Hearings before the Committee on Foreign Relations, U.S. Senate:
   (*a*) May 28, 1968, Defense Department sponsored foreign affairs research.

social-science concept that gives inadequate weight to the factor of military effectiveness, which cannot readily be quantified and fed into computers.

Men without the necessary technical training and practical experience hold positions of authority within the civilian headquarters organization, positions that permit them to decide technical and operational matters. Lacking the hard experience of those who must solve complicated technical problems, who daily come up against the difficulty of getting anything concrete accomplished in this world, the administrators and systems analysts of the Defense Department make little allowance for technical expertise in their "scientific" decision-making process. They have little if any comprehension of the elusive attribute of exceptional personal perception and ability that anyone involved in a new technology must possess if he is to succeed. They customarily substitute "method" for "substantive knowledge."

This is typical of the social-science approach which at present permeates the civilian headquarters of the Defense Department where social scientists hold high position. In education, it has led to the dogma of the progressive educationists that knowing how to teach is more important than knowing what to teach. In management, it fosters the delusion among high-ranking administrators that the position they hold of itself invests the holder with competence in all areas of his domain.

That the Defense Department is a huge and costly institution bound by inordinately involved and time-consuming procedures is self-evident and fairly well known. Not so well known and potentially more dangerous is the fact that, by virtue of sheer power and blinded by their own propaganda, those in charge consider themselves competent to engage in actual design of complex technical equipment and in the detailed direction of military operations.

Some examples: A very high DOD civilian official used to conduct weekly design meetings with a contractor during which the design of a most complex weapons system was evaluated in detail. Another high civilian DOD official held meetings attended by other leading civilians of the headquarters staff and by military line officers where the design of the complex equipment of a new submarine was evaluated. None of those present was experienced in the relevant technology. On other occasions, the DOD general staff has bypassed the Navy Department and gone directly to subcontractors to obtain technical and financial information. The financial information was requested on a contract then under negotiation by the Navy's contractor. The result may be an increase in cost.

What is forgotten by those who set up these elaborate decisionmaking processes is that the military is an operational organization with specific technical tasks to perform, and that these require a high degree of specialized technical knowledge and experience. They are tasks which are not amenable to purely management techniques. They lie in two different areas of human competence, and are not interchangeable.

Different elites disagree with each other. The problems with which administrators deal spill over into areas where they are not specialists, and they must either hazard amateur opinions or ignore larger issues—which is even worse. We have created a form of organized disorganization because the chief administrative goal of the Department of De-

fense appears to be the exercise of control in areas where their staff is not expert. This is why their dream of total efficiency through a new "science" of management has so often been shipwrecked on the hard rock of reality.

The vast organizational structure built up by the civilian general staff is out of proportion to the administrative work that needs to be done. It is designed to serve two additional purposes—neither of them contributing in any significant manner to military effectiveness. First, it gives play to the theoretic concepts of the social scientists and to their postulates on how decisions should be arrived at. Second, it offers "proof" to the uninitiated public that the job is getting done. This is accomplished by complex charts and lengthy "word-engineered" organizational descriptions. The civilian general staff can point to these and to its large number of administrators as "proof," as uncontradictable authority that everything necessary is being done. And all of this is expounded and celebrated by the DOD public relations staff—its propaganda arm. They will "prove," when profits on military contracts increase, that in fact the Defense Department is "saving" money. They will counter congressional questioning of Defense Department decisions by "proving" that a highly scientific decisionmaking process is at work and Congress need entertain no doubts or misgivings.

Their anonymity and their control of a vast public relations staff—paid for by the American taxpayer—protects high-level administrators who commit errors. They should not thus place themselves above public criticism. Other public officials are judged by their performance, by the results they achieve. A simple measure of the efficiency of the civilian management of our Military Establishment is the leadtime it requires to produce new military weapons. On this point, let me quote from a press conference held October 27, 1959, by Chairman John A. McCone of the Atomic Energy Commission, on his return from a visit to Russia:

> QUESTION. I wonder if you could tell us from the administrative side whether you found that their administration is perhaps abler to put policies into practice a little bit faster than we are? What comparisons you might draw on the administrative side.
>
> Chairman MCCONE. We were quite surprised with the speed with which they could accomplish certain specific objectives. Their plan of organization, under which their institutes which correspond to our laboratories are operated by their Academy of Science, seem to give them a facility for mustering and directing their scientific and technical talent in such a way that they get things done in remarkably short time.
>
> QUESTION. Does this business of expedition in making decisions and mustering their financial and brainpower have any application in this country? Is this something that we have to improve on?
>
> Chairman MCCONE. I think that is right.

I mention these comments of Chairman McCone because, if anything, they are even more pertinent today than when he made them in 1959. What I call the "administrative timelag" has grown immeasurably in the interval. I believe there is a direct relation between this increase and the vast expansion of the Defense Department's civilian general staff in the last 8 years. There is a saying that no one can be called a great economist who causes an economic disaster. By the same token no one engaged in managing our Military Establishment can be called a great administrator when, under his administration, our own competitive position vis-a-vis a potential enemy deteriorates.

Recently I testified that we may find ourselves in the midst of elaborate cost-effectiveness studies when our opponents demonstrate they have outproduced us in the sinews of war. But so strong is the civilian general staff's enthrallment with studies, that even when actual proof is presented that the Soviets are outdistancing us in submarines, it is impossible to break the spell—the studies must continue.

Lack of funds cannot be used to excuse the DOD's delay in authorizing new design submarine construction. Congress has not only made the necessary funds available but has repeatedly urged that the new type submarines be built without delay. Further, the Navy has offered to provide funds from other Navy programs for the increased cost.

The manner in which the electric drive submarine has been handled by the Department of Defense is far more important than the specific issue of the submarine itself. If this manner of doing business—where the highest levels of civilian and military administration in the Department of Defense become involved in details of warship design, including submarines—is indicative of the way other Department of Defense projects are being handled, we are in serious trouble.

I believe it is incumbent on those of us who are familiar with the fundamental principles involved in the issue of the electric drive submarine to express our deep concern.

Question: Would you provide your recommendations on what needs to be done in the Department of Defense to correct this situation?

Answer: I believe what I have just said leads to some obvious simple remedies.

First, I would require the DOD headquarters—the civilian general staff—to be drastically reduced in number. As an immediate step I would require that it be reduced to the level of numbers and of high-level positions it had in 1960.

Second, I would return to the three Services the right to run their own departments—and not remain the servants of the vast defense headquarters civilian directorate.

The DOD has become unmanageable because of its huge size. This would be equally true of any other centrally controlled organization with similar responsibilities and with many billions of dollars to spend. The immense growth of recent years was never the intent of Congress, and it is Congress that can and should require immediate return to the basic concept of the Defense Department. The Lord hasn't created people with sufficient wisdom to run these vast organizations. The corrective judgment of the legislative process must therefore be used.

The Military Establishment should, of course, be managed by a civilian headquarters staff, but the staff should set policy and not engage in detailed administration and operation, and in the design of military equipment, as it now does. In a homely manner of speaking, the Department of Defense is constipated; it must be purged or it will become increasingly torpid.

I well know the reluctance of the legislative branch to interfere with an agency of the executive branch. But after all, Congress does have the constitutional authority to "raise and support" our military forces. Surely this means more than merely appropriating funds. As the representative of the people in whom all authority ultimately resides, the Congress has the responsibility of "oversight"—of making certain that the taxes paid by the people are spent wisely and in the public interest.

Should we ever lose a war, to what avail would it then be to say: It was not the business of Congress to meddle in affairs of the executive branch.

One of the reasons you do not have a full picture of what goes on in the Defense Department is that you permit witnesses to use "meta-talk"—the diplomatic language which is expressive of bureaucratic caution. It is highly serviceable for fending off questions one does not wish to answer. It is effective because it takes advantage of and plays on the courtesy of congressional committees who try not to embarass witnesses.

Lately, I find myself thinking of the commission set up after the end of World War I by the Weimar Republic to study and report on the causes of Germany's defeat. The commission found that a major cause of this defeat was the amount of paperwork required of the armed forces. Toward the end, they were literally buried in paper.

I hope we will never have to appoint a similar commission.

(End of inserted information.)

Admiral RICKOVER. Mr. Chairman, I think it is important you understand that procurement policies are only one aspect of the overall problem of the high cost of operating the military. Your committee should not be unaware that the factors listed in my replies to the Joint Committee on Atomic Energy also result in technical and economical inefficiencies.

Chairman PROXMIRE. That is good advice, Admiral. We will explore this aspect further.

DEPARTMENT OF DEFENSE OFFICIAL REQUESTS "FACT SHEETS"

Admiral RICKOVER. Recently I had the first intimation of Department of Defense interest in my testimony—that is, aside from their public statement in December 1963 in which they contended I did not know what I was talking about. On August 22, 1968, the Deputy Assistant Secretary of Defense for Procurement requested individual fact sheets on each specific fact covered in my testimony before the House Appropriations Committee. He stated he desired the information on the specific circumstances of these facts and the rationale used to support statements I had made to Congress "for the purpose of his own analysis and to respond to congressional inquiries."

I responded that it was a mystery to me why the Department of Defense first makes public statements that my testimony is incorrect and then, later on, requests me to supply them the facts. I told them that I could not see what purpose this information could serve on an after-the-fact basis.

Chairman PROXMIRE. You mean to say you had to provide fact sheets on each specific example you used in your testimony?

Admiral RICKOVER. Yes, sir. I prepared and forwarded fact sheets on each of nine specific examples covered in my testimony. I forwarded them to my superiors with my comments.

Chairman PROXMIRE. Could we have a copy of your response, Admiral?

Admiral RICKOVER. Senator Proxmire, again I would have to request Department of Defense clearance.

Chairman PROXMIRE. I wish you would do so. Again, if my staff can do anything in this regard, please tell me.

Admiral RICKOVER. I shall, sir.

(The correspondence appears as Appendix II, this volume. See p. 166.)

NEED FOR COMPREHENSIVE PROFIT STUDY

Chairman PROXMIRE. Admiral, we have been pressing the General Accounting Office to make a comprehensive and complete study of contractors' profits. We feel that until we have that information it is going to be very, very hard to get action in a lot of areas. We want to have them make a study of the realized profits. Mr. Staats himself testified on Monday that nobody has made that kind of a study—no congressional committee has made that kind of a study, no agency of the Government, no foundation, no university has.

Admiral RICKOVER. May I interrupt, sir?

Chairman PROXMIRE. Yes.

Admiral RICKOVER. The question is why hasn't the General Accounting Office done so? Who has stopped them?

Chairman PROXMIRE. Well, they are reluctant to make it. Of course, they will do it if they are directed to do so.

Admiral RICKOVER. That is just the point. They have a charter. It is a broad one. I have an extract of it here:

"The Comptroller General shall investigate at the seat of Government or elsewhere, all matters relating to the receipt, disbursement, and application of public funds, and shall make to the President when requested by him and to Congress at the beginning of each regular session, a report in writing of the work of the General Accounting Office, containing recommendations concerning the legislation he may deem necessary to facilitate the prompt and accurate rendition and settlement of accounts and concerning such other matters relating to the receipt, disbursement, and application of public funds as he may think advisable. In such regular report, or in a special report at any time when Congress is in session, he shall make recommendations looking to greater economy or efficiency in public expenditures."

Now, I would think that $45 billion in defense procurement would elicit great attention from the General Accounting Office. This is 25 percent of the entire budget of the Federal Government. They ought to be very much concerned with how well and how efficiently Government procurement is carried out. But they have apparently waited for somebody to tell them what to do. By failing to take the initiative they are, in my opinion, not carrying out their primary function.

Congress has charged the General Accounting Office with a great responsibility, and Congress should be able to depend on them to take the lead.

GENERAL ACCOUNTING OFFICE IS CONSCIENCE OF GOVERNMENT

The General Accounting Office is, in a sense, the conscience of our Government. It should study the *entire* subject of defense procurement in depth, not because everything bad is in the Defense Department, but because the major part of the Federal budget is being spent by this one Department. Whatever principles and rules are evolved there—what you learn from that particular Department—will be applicable to the National Aeronautics and Space Administration, to the Atomic Energy Commission, and to other Government agencies.

Chairman PROXMIRE. As you say, of course, they make some very useful studies which enable us to save substantial sums here and there, but not the comprehensive kind of study that would be most useful to us.

There is no doubt we need more information. The Comptroller General testified Monday about all the audits they are conducting. The General Services Administration was paying about $1.5 million too much for light bulbs. One Air Force base paid too much for propane gas. Cape Kennedy spent more than it should for a fire department. Of course, these audits all lead to substantial savings, but we still do not have a comprehensive picture of Government procurement. I had great difficulty Monday morning determining the Government-wide implications of these findings.

Admiral RICKOVER. The General Accounting Office has apparently been reluctant to take the initiative on these broad, basic issues. I have told the Comptroller General and his officials that they are missing a great opportunity to save the Government very large sums. They should be taking on a few major issues where important principles are involved and then evolve Government-wide procurement rules based on their findings.

In my opinion, the General Accounting Office should be conducting broad investigations into fundamental aspects of Government contracting operations. It is not enough simply to have a charter of responsibility for a job; the job must be worked at and kept meaningful in relation to the existing situation. Many of our present-day regulatory commissions were set up in the 1930's, during the Roosevelt administration, to correct the abuses prevalent at the time. But once the major abuses were corrected and the public economic welfare improved, many of these commissions acted as if their job was finished without concern for new abuses that were introduced.

No problem can be solved once and for all. This is so because men, being endowed with free will, continually alter the condition of life.

Industry quickly learned to live with these new commissions and to accommodate itself to them. Often the membership of these commissions was comprised of people from the very industries or organizations they were intended to regulate.

More important, industry soon learns how to achieve its ends within the existing rules. Seldom do rules keep pace with events. New abuses crop up, and new rules must be continually devised to cope with the changing situation. For example, Congress found widespread abuse in charges for consumer loans and passed the truth-in-lending bill. Senator Hart recently pointed out abuses in the insurance industry. It is a role of Government to search out these abuses and to change the rules and procedures to prevent them. It is a constant, reiterative process.

The point I am making is that the General Accounting Office, like any other organization, must constantly examine its operations to insure that it is in fact carrying out its charter, and not just doing the same old things long after the situation has changed. I do not think Congress wants the General Accounting Office to preoccupy itself with investigating relatively minor matters when there is an overriding need to look into the fundamental issue of how the Government does its contracting.

The General Accounting Office, in my opinion, if it is to perform its primary function, would start using its talents to conduct a thorough review of how the Department of Defense does business, not only the profits it pays, but the whole way it goes at it, what rules it uses, and so on. Let the GAO compile a "Who's Who" of contracting officers and their relations with industry. What interchange have they had with Government and with industry? Who are the members of these various groups such as industry advisory groups? What is their background?

Chairman PROXMIRE. We heard some interesting testimony, for instance, on the Logistics Management Institute and some of the other advisory groups they have set up.

Admiral RICKOVER. One of the most influential of these groups includes in its membership officials from industry and the Department of Defense. This is the Industry Advisory Council—it used to be called the Defense-Industry Advisory Council before the term "defense-industry" acquired the connotation it has today.

The Industry Advisory Council has considerable influence on Department of Defense procurement policy. This group of high-level industry and Department of Defense executives meets regularly to discuss procurement policies and other matters concerning weapons acquisition. It is one of industry's most effective forums for influencing defense procurement policies. I believe this group has more influence on defense procurement policy than the Department of Defense's Armed Services Procurement Regulation Committee itself.

Industry is represented on the Industry Advisory Council by the chief executives of many large defense contractors. The Department of Defense is represented by Secretaries, Assistant Secretaries, and top-level military officials. In contrast, the Armed Services Procurement Regulation Committee is comprised of lower level Government officials who have considerably less influence.

There are problems in such an arrangement. Let me read comments from the September 1967 issue of *Armed Forces Management* on the Defense Industry Advisory Council:

"* * * it would be naive to assume the DIAC discussions can remain entirely free from partisan views. By the very nature of the corporate structure, it is the management philosophy of a given corporate head that permeates that particular organization and forms the basis for positions adopted by that organization. With this premise, often a top manager's evaluation of a given subject area must be redolent of a position that might be taken by his own firm or association.

"* * * The DIAC meetings are kept as informal as possible and are conducted without public record other than a general summary of minutes for the benefit of the membership. While both Defense officials and the Council recognize the inherent danger of negative reaction in not making the DIAC proceedings public, it is nonetheless felt this type of 'free climate' is conducive to the most candid and straightforward exchanges.

"There can be not question that the DIAC discussions, to date, are making a major contribution to defense-industry relationships."

Please note that no public record of these meetings is made. It is open to question whether such meetings at which Government policy for business is formulated should be conducted without such a record.

I believe that for most high-level Government officials the Industry Advisory Council is their only real contact with the procurement world. As a result, their viewpoint is influenced by what they hear from industry executives during these meetings. Doubtless, these Government officials would have a much different outlook on defense procurement problems if regular meetings were held with working-level Government contracting officers, Government auditors, and technical personnel who have to deal with industry on a day-to-day basis.

The problem of industry's influence on Government actions through "industry advisory groups" is not a new one. You may remember, Mr. Chairman, an issue in 1955 and 1956, when the Antitrust Subcommittee of the House Judiciary Committee inquired into the operations of the Department of Commerce Business Advisory Council. That Council included many prestigious business leaders, including representatives of the Government's major defense contractors. Its meetings were not open to the public, nor did the Commerce Department release full minutes of meetings. The Secretary of Commerce refused to provide the records of the Business Advisory Council to the Antitrust Subcommittee.

At that time the chairman of the subcommittee made this statement:

"While there may be many substantial reasons justifying the existence of the Council, no good reason for hiding its operations from the public has ever been suggested."

That reasoning applies equally today to the defense and industry advisory groups which have a great influence on procurement policies.

When the subcommittee was finally able to obtain information on the Business Advisory Council, it found a number of practices it considered questionable. For example, the operations of the Council were being financed by industry contributions. The salary of the Executive Director of the Council was paid from these contributions. In addition, the subcommittee found that the Council was paying for a study of the Government's antitrust laws at the very time the Department of Justice was taking legal action against several of its members for violation of these laws. The subcommittee also found that members of the Council were being given access to Government records not available to the public, or even to Congress.

After their hearings were concluded, the subcommittee issued an interim report calling for rules for business-Government advisory groups. These rules included

—That such groups receive statutory authority before they are established.

—That meetings be held under the direction of Government-paid officials.

—That complete minutes of the meetings be kept and made available to Congress and the public.

I don't know what happened to these recommendations. They seem sensible to me. I don't know why they were not adopted.

The Business Advisory Council continued to function until 1961, when Luther Hodges became Secretary of Commerce. He pressed for changes in the operations of the Council, including meetings open to the public and the addition of academic, professional, and small business representatives to its membership. The members of the Coun-

cil would not accept these changes, and in July 1961, it severed connection with the Department of Commerce. Today the group operates as a private organization under the name of "the Business Council."

Chairman PROXMIRE. I think a comprehensive study on the impact of such industry advisory groups on defense procurement policies would be very helpful to us. It seems to me that the Industry Advisory Council has great influence on defense procurement policy, and I do not see how a review of defense procurement could be comprehensive without a critical evaluation of the activities and functions of this group. Under any circumstance, public records of the meeting should be made. Perhaps the General Accounting Office should look into this as part of an overall review of defense procurement.

Admiral RICKOVER. I believe the General Accounting Office should be required to take the lead in such reviews. With our large population, with the huge sums of money we are spending, with the vast bureaucracy—which essentially has gotten out of control of Congress and, therefore, of the people—the General Accounting Office can perform one of the most important functions in Government. It can look at these issues broadly and make recommendations to Congress for basic changes. It can provide an invaluable service to the Congress and to the country if it would but take the initiative. It is the only office in Government both authorized and staffed to examine such issues.

Chairman PROXMIRE. You mean a study of profits and a more general study of the entire procurement operations?

Admiral RICKOVER. Yes, sir, the entire procurement operation. If it does not take the initiative itself, I think Congress should direct it to make a comprehensive study.

Chairman PROXMIRE. Congress directed them to make the feasibility study of uniform accounting standards.

Admiral RICKOVER. Yes, sir. But that is only a start. There is a Chinese proverb that the man who eagerly awaits the arrival of a friend should not mistake the beating of his own heart for the thumping hooves of the approaching horse. Congress will have to stay on top of that study so we can be sure to get something of value out of it.

ARGUMENTS AGAINST UNIFORM ACCOUNTING STANDARDS NOT VALID

Contractors will tell you that it is too difficult, or too costly, to establish uniform accounting standards; that such standards would impinge on management prerogatives; that industry could not live with uniform standards; that they are unnecessary.

We have heard all these arguments before. When it became apparent that we needed more stringent production and quality control standards for manufacturing reactor plant components for nuclear warships, we were told that industry could not work to such strict standards. But tight standards were necessary to insure safety of the crews and reliability of the powerplants. We stopped worrying about whether it could be done—we just did it.

Industry usually overdramatizes the difficulty of change. However, once we are committed to make the change, many of the difficulties disappear. Recently, *The Economist* described an arrangement the British Government worked out with industry to accomplish the same sort of function our Renegotiation Act is supposed to perform. Appar-

ently British industry objected to certain features of the system; nevertheless, the new rules go into effect next year. Return on investment figures, which have been adopted as the measure of profitability, will have to be based on the Government's accounting standards. The article states:

"After all its posturing over the last 3 years, the Confederation of British Industry has probably now found that post-costing and equality of information are not such painful injustices as it once seemed to be arguing. However, the Government has succeeded in introducing these two principles without damaging industry's incentive to seek higher efficiency and pocket some of the proceeds."

Thus I am skeptical when people say how difficult it will be to establish uniform accounting standards. I do not see how these standards can be any more difficult to establish than are standards for design and manufacture of complex military equipment. Further, it may be less onerous to accept standards for accounting than it is to have numerous Government auditors, contracting officers, and technical people at the contractor's plant trying to reconstruct his books to find out what it costs him to manufacture the equipment. It is also very difficult for the Government to tax our people $2 billion extra each year when that sum could be saved by use of uniform accounting standards.

Chairman PROXMIRE. The General Accounting Office gave us a long list of people they are working with. Many of them, or their representatives, testified before the Banking Committee earlier this year against the uniform accounting study. I think it most important that the General Accounting Office get your views because you are so highly respected and because you have a view that this can and should be done.

CONGRESS MUST FOLLOW FEASIBILITY STUDY CLOSELY

Admiral RICKOVER. I will be happy to give my views to the Comptroller General if he requests them. I think it is important that Congress keep an eye on this study, Mr. Chairman, so that we can be sure that the question of feasibility will be obtained in an objective manner.

I am concerned that the General Accounting Office study may turn into an academic exercise for the benefit of professional accountants. The other day I read a speech given by the Department of Defense audit representative to the General Accounting Office study group. Let me read from the conclusion of his speech:

"Looking ahead to the completion of our task and the aftermath, it seems to me that our major contribution will lie in the information and data which we shall have been successful in accumulating, analyzing, and reporting, and our related efforts to motivate and assist in the development and improvement of cost accounting principles as a useful communication medium among all interested elements in our society. To state it in another way, if the results of our study are considered productive, and perhaps even 'generally accepted,' I would think that it would be more because we succeeded in advancing the state of the art than because of any specific conclusions we reached as to whether or not uniform cost accounting standards are feasible."

Now it seems that this person is concerned more with advancing the state of the accounting art than with developing a sound basis for

Government procurement. With that attitude, nothing constructive will be done.

Chairman PROXMIRE. Admiral, I raised that point specifically with Mr. Petty, the Director of the Defense Contract Audit Agency, when he testified Tuesday. He and Mr. Malloy, the Deputy Assistant Secretary of Defense for Procurement, assured me that the Department of Defense was approaching this study with an open mind.

Admiral RICKOVER. Of course, they would say that. What else could they say? Advisers from industry and the accounting profession will also say they have an open mind, but I question just how openminded they really are. These groups have a vested interest in the status quo. The logic may be faultless in its own terms but the terms fall short. That is why Congress will have to follow this closely. The public interest is at stake, yet the public will not be represented in this study except to the extent that their elected representatives take a hand. Congress cannot just turn this study over to the General Accounting Office and forget about it.

Chairman PROXMIRE. Admiral, did the General Accounting Office contact you yet regarding the feasibility study?

Admiral RICKOVER. No, sir.

Chairman PROXMIRE. They intend to. They testified at the hearing they will do so. We made a point of that. We said: "We want you to contact Admiral Rickover on this." They have a questionnaire they want to send out.

Admiral RICKOVER. I will be happy to do everything I can to help them, sir.

CONGRESS MUST BE THE PUBLIC'S SAFEGUARD AGAINST SPECIAL-INTEREST GROUPS

Mr. Chairman, I have explained why the Department of Defense and the General Accounting Office will not on their own volition correct the deficiencies in defense procurement. Industry, of course, has no interest in seeing these deficiencies corrected. In many cases, the existing loopholes, such as the exemptions in the Renegotiation Act, are the direct result of industry efforts. Other loopholes are the result of influence on defense procurement policy exerted by industry advisory councils, industry associations, and private firms. There are many examples indicating that those with vested interests cannot be relied upon to act against their own interests.

You have this very same problem with automobile insurance. Senator Hart and others are trying to devise a more workable system that would eliminate much of the litigation inherent in the existing system. At present, half the customer's premium goes for administrative and legal expenses. With the reforms advocated by Senator Hart a larger portion of insurance premiums would go to policyholders in payment for actual damages. Yet, the insurance firms oppose the change; the some 20,000 or more lawyers in the industry oppose the change; the multitudinous number of accountants and claims personnel oppose the change. All of them have a vested interest and consequently have no incentive to change. But who, other than Congress, will protect the public in situations of this sort?

The patent situation is similar. Patent lawyers are considered the acknowledged experts, and it is they who have influenced our present

patent policies. As a result, the system of administering patents is cumbersome and requires extensive legal assistance—to the benefit of the 6,000 private patent lawyers. Here also, the patent lawyers are alined with industry in maintaining the status quo.

In this connection, you will remember the opposition of the automobile industry to Federal safety standards, and the opposition of the accounting profession to the establishment of accounting standards.

With the exception of Mr. J. S. Seidman, of the New York accounting firm of Seidman & Seidman, the accounting profession, and industry, even the Department of Defense, were unanimous in opposing uniform standards of accounting. Their opposition was successful in persuading the Senate Banking and Currency Committee to require only a study of uniform cost accounting standards rather than the establishment of such standards as provided in the House version of the bill.

Today some leaders in the accounting industry are beginning to recognize the inadequacies of the present accounting system. Thirty years ago the accounting profession recognized the need to develop accounting standards. But they have procrastinated, perhaps because they thought it not in their interest to develop such standards. Nor will they, I feel, take effective action until someone forces them to do so.

I could give many other examples but the point is, I think, obvious. Congress is the public's only safeguard in areas such as defense contracting where all the so-called experts have vested interests. For this reason, Congress has the obligation to take the initiative in these matters.

Chairman PROXMIRE. I intend to watch this area very closely.

Admiral RICKOVER. Mr. Chairman, you represent the State of Wisconsin—a State which has been identified with what has been called "progressive conservative" political movements. For this reason I believe you will be interested in what Henry L. Stimson, who was Secretary of War from 1911 to 1913 and Secretary of State from 1929 to 1933 in Republican administrations, and Secretary of War from 1940 to 1945 in a Democratic administration, has said. It is germane to the issue you are considering today. I will quote from "*On Active Service in Peace and War*":

"Responsibility could not be divorced from authority. Men began to think irresponsibility was a direct result of scattered authority and divided power; fear of too much government had led to untrustworthy government. The elected officials must have more power, not less—only so could they be held accountable for success or failure.

"It was in this stream of thinking that Stimson had found himself in January 1911, when, at Theodore Roosevelt's request, he made a speech to the Republicans of Cleveland, Ohio:

" 'Which one of you businessmen would assume the presidency of a great enterprise under pledge to conduct it to a successful conclusion, if you were limited to 1 or 2 years for the task; if you could not choose your own chiefs of departments, or even your legal adviser; were not allowed full control over your other subordinates; and if you were not permitted freely to advise with and consult your executive committee or your board of directors?'

"Having appealed to the common sense of his largely Republican audience he returned to his main theme: 'So long as our Nation remained young and hopeful, so long as our problems were simple, we could scrape along even with happy-go-lucky inefficiency. And we have done so.

" 'But this condition of national simplicity remains no longer. The giant growth of our industries, the absorption of our free land, the gradual change of our Nation from a farming people to one living largely in cities, with needs far more diversified than those of their fathers, have brought us face to face with the most acute problems of modern democracy. Side by side with our helpless officialdom has grown up the tremendous structure of modern incorporated business. There is nothing inefficient in that development. Its wealth is limitless and increasing, its organization has the perfection of a military machine, its ministers spring to their tasks endowed with the best specialized training that science can give them. The result of contact between the two could have but one issue. So long as they occupy any ground that is common, so long as business has any relation to the public, one or the other must control. And it is not difficult to see, under present conditions, which that one must be.'

"Business had grown big, but this in itself was no sin. The crime was simply in the failure of Government to keep pace—'one or the other must control,' and control should rightly belong *only* to Government."

Certainly Mr. Stimson cannot conceivably be classed as having radical views on economics or anything else. He was a corporation lawyer for a good part of his life. The term "pragmatic radical" might be a good description of him.

The issue, as I see it, Mr. Chairman, is "who is going to be in control, the Government or industry?"

OVERPRICING EXISTS TODAY

Many Department of Defense procurement officials, and even some Members of Congress are not too concerned about defense profits because they believe the Renegotiation Act protects the Government against overpricing. That is a serious mistake. History is replete with examples of how industry has used loopholes in Government policies to its advantage. Overpricing might not be as obvious today as it was in the past, but I have no doubt it still exists. Government regulations have made modern companies and their accountants very sophisticated in how they show the profit picture.

During the Civil War there were no statutes to regulate profiteering. As is well known, contractors reaped unconscionable profits on military procurement, and they had little or no reason to hide these profits.

In the Spanish-American War, Congress tried to control profits on armor for naval ships by setting a maximum price for armor plate. Contractors united to defeat this move by refusing to sell to the Government at the specified price.

During World War I, the Government acted to limit defense profits. It used cost-plus-a-percentage-of-cost contracts in World War I. Contractors simply inflated costs with consequent increases in profits. In pegging raw materials costs, the Government found it

had to set prices quite high to enable it to find enough firms willing to sell to the Government at the pegged prices. As a result, low-cost producers were able to make excessive profits by selling to the Government at the high, pegged prices.

In 1934 Congress passed the Vinson-Trammell Act which limited profits to 10 percent of the contract price for naval vessels and aircraft. Again, contractors simply drove up costs and thus increased their total profit. Further, a profit of 10 percent of costs could still result in exorbitant profits from a return-on-investment standpoint.

Excess profit taxes were established during both World Wars, but they were only partially effective. These taxes did not apply if a contractor could show that his profits, no matter how high they might be, were not appreciably higher than his average prewar profits. Thus, how industry accounted for costs became a significant factor.

During and after World War II, the Renegotiation Acts of 1942 and 1943 introduced the present system of contract renegotiation. Under contracts covered by these laws, contractors submit statements of costs and profits to the Renegotiation Board each year. The Board in turn evaluates the reasonableness of the profit claimed in context with other considerations such as the contractor's efficiency, his type of business and the degree of risk assumed by him. By means of additional legislation, the renegotiation system developed during World War II has been extended through the present time. Under renegotiation, the contractor has to be more sophisticated, but there remain serious loopholes which tend to defeat the act's purpose.

Mr. Chairman, I am sure you are aware that concern over the large profits being made by industry is not confined to Members of Congress. It has been of longstanding concern in our history and has led to many investigations and to the enactment of legislation intended to be remedial.

But the situation today is graver than it has ever been. With an annual military procurement of some $45 billion and little likelihood it will decrease in the foreseeable future, large profits have become an issue gnawing away at the faith of our people in their Government, at the way the defense business is currently being conducted.

A democracy is a delicate and fragile human construction. For it to exist, the people must believe in their Government and in their institutions. When any special group, as for instance a business minority takes advantage of the Government, the faith of the people is undermined. That is a very serious matter. I believe this is now happening; I think those in the executive branch ought to recognize that unless the situation is remedied our democratic form of government is in jeopardy.

Ours is the finest Government that has ever been devised. Gladstone, the British statesman, referred to our Constitution as "the most wonderful work ever struck off at a given time by the brain and purpose of man." I would like to see us go back to the principles of the Founding Fathers. We have departed from some of these principles. Today, pressure groups and special interest lobbies exert influence on public policy disproportionate to their proper role and responsibility in society, and not always in the public interest. This is a basic moral and political issue that calls for solution without undue delay.

Our people are unable to understand the logic of having their sons drafted to fight a distant war at the risk of their lives, while at home the Government permits large corporations to make high profits from the supply of war materials.

We should not underestimate this feeling among the mass of our people. I believe those responsible for permitting this—both in industry and in Government—are doing a great disservice to industry as well as to Government. Inevitably there will be repercussions which will increase the power of Government and limit the freedom now possessed by industry. Perhaps it asks too much of the officials of a corporation that they take this factor into account. The head of a corporation and his chief officials are, in essence, judged by only one criterion—the profit the corporation makes. It is unrealistic to expect them to do otherwise than try to make the highest possible profit. If they fail to do so, others will take their place.

For this reason the Congress must constantly bear in mind the growing autonomy of the Federal bureaucracy, the increasing lack of control by the Congress, and the bureaucracy's tendency to make accommodations with industrial corporations. If a close partnership between Government and industry is actually necessary, then a great responsibility rests on the Congress and on the executive branch to see to it that these giant organizations do not become, in effect, a fourth branch of Government—a fourth branch, but with men exerting power without political or legal responsibility. It will be necessary to check and control them.

Given this situation, Government must and should intervene. If it does not—especially in the case of military equipment—it will continue to lose the confidence and faith of our people.

KNOWLEDGE OF HISTORY LIBERATES US

A knowledge of history liberates us from the restrictions of our time and our place, and gives us valuable knowledge with which to face modern problems. History repeats itself. This fact is a testament to human stupidity. Insofar as problems are not purely technical they have to do with human beings, and men do not change as much as is often thought, merely because they have more gadgets.

In anything concerned with human behavior we must still depend on wisdom—a term expressive of man's cumulative experience—sifted through an observant and intelligent mind. The wisdom of ordinary, even illiterate people over the ages has been quite remarkable. This is why the common folk sayings, and the words of the Bible, even though they originated in preindustrial societies, remain valid today—despite the vast advance of technology and its effect on our environment.

One bit of wisdom that has struck me as having eternal value is that man cannot live by bread alone. A human being whose sole nourishment comes from the pursuit of material gains is a defective person. Such persons must be regarded with caution because their judgment is impaired. For this reason, it is important that their activities be kept under scrutiny so they may not unduly harm the body politic. Conservatism cannot take honest root in a situation where the criteria for success or failure are ruthlessly materialistic.

Henry L. Stimson, the "pragmatic radical" I mentioned, once said the people were like a behemoth that every once in a while turns over and completely reverses itself. I believe our people are now in the process of turning over. It would be the better part of political and business wisdom to recognize this and to conduct our affairs so as not to cause the turning over to be so great and so rapid as to cause too many unpleasant consequences.

INDUSTRY ONLY WANTS A FAIR ADVANTAGE

While we have gradually been evolving a basic set of laws to protect the Government, industry has been developing a complex set of accounting devices by which it can circumvent them. As industry becomes more sophisticated in finding and exploiting loopholes in the law, Congress must become more diligent in closing them. Industry will fight this effort; they will come here and testify as if they were entitled to a few loopholes in any legislation that affects profits. They will tell you that they don't want much, Mr. Chairman. All they want is a fair advantage. [Laughter.]

Today, in a world that knows no peace, inefficiency in this area of the Department of Defense's responsibility courts serious difficulties. It takes time to spend money. When more money is spent than is absolutely necessary, military equipment is delivered late; it will often be obsolescent because of time wasted. You have a good case here where an action with a clearly beneficial purpose in one area—saving money—would have tangential effects of benefit to another area—efficiency.

Chairman PROXMIRE. The statement you just made that by spending too much money we can actually create inefficiency is not understood by most people. It is a throughful observation.

I wonder whether you have any thoughts on the recent announcement by the Defense Department that it will engage in forms of social work—that it will use its money and talents for social welfare. This issue has relevance to the work of the Joint Economic Committee because it concerns allocation of funds among the Government departments. Should defense funds be used for this purpose?

Admiral RICKOVER. I have always felt, and I have previously testified that the great danger for any bureaucracy is to extend itself into areas which are not its direct concern, where it therefore usually has no special competence. The defense effort of the United States is so vast and so complex that it is almost impossible of accomplishment. For it to achieve even a modicum of efficiency requires the full-time devotion of all its people.

There are other organs of Government that can perform social functions better and with greater efficiency than the Defense Department. This is not its primary task. I can see no special competence for social work in the Department of Defense, for engaging in "a fertility of projects for the salvation of the world." In sum, I would say in a quite general way that the assumption by the Department of Defense of *any* function outside its specific task of the military defense of the United States is deterimental to its proper and primary purpose.

Chairman PROXMIRE. Admiral, this committee has been very interested in your testimony, and especially in your specific recommendations for congressional action to correct the problems you have enu-

merated. I think it would be helpful to the committee and the other Members of Congress if you would summarize your main points.

Admiral RICKOVER. I will be happy to do so, sir.

The essence of my testimony, Mr. Chairman, is that defense procurement policies must be tightened if the public interest is to be protected. I have used specific examples to illustrate many of the deficiencies and loopholes in present defense procurement policies. I have tried to show that prevailing attitudes within the Department of Defense are not conducive to objective evaluation of these policies because the Department of Defense has been greatly influenced by the industry viewpoint. In the course of day-to-day compliance with existing procedures, no one there seems to have stepped back and taken a critical look at the overall defense procurement process. The General Accounting Office also seems reluctant to get into this area in depth.

RECOMMENDATIONS FOR CONGRESSIONAL ACTION

For these reasons I believe that Congress will have to become an active protagonist in overhauling the defense procurement process. This is a large and difficult task, I realize. However, it is important that it be started promptly. Therefore, I recommend the following course of action for the Congress in the area of defense procurement:

First, make every effort to insure that uniform standards of accounting are established as quickly as possible so there will be a sound basis for contracting, so the Government can readily identify actual cost and profits. Since, under the terms of Public Law 90–370, the General Accounting Office has been required to look into this matter, Congress should insure that the feasibility study conducted by the General Accounting Office is objective and that in this study the public interest is kept foremost—above the interests and the opposition that can be expected from industry and from many in the accounting field. Until this study is completed and until uniform standards have been established, the Department of Defense should be required to adopt the cost principles in section XV of the Armed Services Procurement Regulation as mandatory for all types of contracts, including fixed price contracts, and for the reporting of cost and profit information.

Second, the Department of Defense should be required to revise the Armed Services Procurement Regulation so that procurement policies reflect the real situation wherein competition in defense procurement is the exception and not the rule. The rules of noncompetitive procurement should apply to all contracts that are not formally advertised procurements. The Armed Services Procurement Regulation should be changed to indicate that it prescribes an upper limit for contracting officers on matters such as profits, allowable costs, use of Government facilities, and the like. Whenever possible, they should obtain the best deal for the Government.

Third, Congress should insist that the Department of Defense develop an effective self-appraisal program in the area of procurement. The numerous examples I have mentioned and the many others brought to light by other congressional hearings and in the press indicates that the Department of Defense appraisal program has not been effective.

Fourth, Congress should require the General Accounting Office to undertake a comprehensive review of defense procurement. Such a re-

view should include a critical look at the fundamental basis and assumptions of defense procurement. The General Accounting Office should get into major issues from which general principles can be developed for Government-wide improvements in procurement. This comprehensive review would be in lieu of the fragmentary approach that has often characterized its efforts.

Fifth, the General Accounting Office should study the impact of the Industry Advisory Council and other industry groups on defense procurement policies and whether the interest of the public requires additional safeguards in such arrangements. The General Accounting Office should look into the interchange of personnel between industry and Government to determine whether legislation is needed to restrict the ability of procurement officials to represent Government and industry alternately.

Sixth, defense contractors should be required to report costs and profits upon completion of each order in excess of $100,000. Such reports should be submitted in accordance with the uniform accounting standards and should be certified by an authorized official of the company. Criminal penalties should be provided for those who submit false or misleading data.

Seventh, defense procurement regulations should be revised so that return on investment is considered in establishing profits.

Eighth, uniform rules that would preserve for the American public the rights to all inventions developed at Government expense should be established for all Federal agencies.

Ninth, present Department of Defense rules should be revised to discourage use of Government-owned machine tools on orders for which their use is not required, so that the Government's investment in such tools can be reduced and so that contractors cannot rely on Government-owned tools to perform other work. The Armed Services Procurement Regulation should provide that decisions to authorize use of Government-owned machine tools on orders other than those for which the tools were originally provided should be considered and approved at the same level and under the same criteria as required to provide them to the contractor in the first place, whenever such authorization would extend the period of time the Government tools are left at the contractor's plant.

Tenth, defense procurement rules should specifically prohibit reimbursement of advertising costs on any negotiated contracts. Government security clearance should be required for all advertising related to defense contracts.

Eleventh, a central Government file should be maintained on contractor experience, showing for each contractor such items as his actual delivery performance, exorbitant or unfounded claims he has submitted, the difference between original and final price of each contract performed, and the amount of excessive profit he has realized on Government work.

Twelfth, the Renegotiation Act should be strengthened by making it permanent, by reducing the level of reporting from $1 million to $100,000 and by eliminating the exemptions for commercial articles, construction contracts, durable equipment, and the Tennessee Valley Authority. Congress should take steps to insure that the Renegotiation Board is adequately staffed to carry out its responsibilities.

Thirteenth, the Truth-in-Negotiations Act should be strengthened by requiring contracting officers to obtain, and contractors to provide, cost data on all contracts in excess of $100,000 unless such contracts are awarded as formally advertised procurements. Congress should prohibit waiver of the Truth-in-Negotiations Act for contractors doing in excess of $1 million of business with the Government annually. These contractors should be required by law to provide cost and pricing data.

Fourteenth, the Defense Production Act should be strengthened to require certification by contractors that rated orders receive priority over nonrated orders; inspections of contractor plants to insure that priority is actually given to the rated orders; and annual reports identifying instances when assistance, as requested by military departments, was not provided. The authority for administration of the Defense Production Act should be reassigned from the Department of Commerce to another agency.

Chairman PROXMIRE. Admiral, you have been a most refreshing witness and your testimony has been illuminating. I particularly appreciate your use of specific examples and your specific recommendations. Many people testify before congressional committees complaining about things that are wrong but few have specific recommendations on how they can be remedied.

I appreciate the time you have taken from your important technical duties to testify here today. It is not often we get the benefit of advice from a person of your experience. Too often we have to rely on the testimony of people who have little direct contact in day-to-day procurement matters. Usually they are at the policy level and seem so ingrained with the present system and so remote from actual events that they are not objective. That is why your testimony is so important to us. You are intimately familiar with the procurement system but not officially a part of it. As a successful program manager for many years, you are in a unique position to evalate the procurement process in terms of its impact on the nuts and bolts of getting the defense job done. I can well understand why you are so interested in this field.

Admiral RICKOVER. I have to be interested, Mr. Chairman.

REASON FOR INTEREST IN CONTRACTING

As you know, my training is in engineering. I have never raised contracting issues out of simple academic interest. I have had to get into the details of Government contracting in order to get my work done efficiently and on time.

I have been made painfully aware of these issues in the course of my technical duties. They affect my ability to do my job since they require that I take much time from my technical duties and devote it to matters which should be the direct responsibility of the large number of officials as listed on the organization charts.

There is no way to determine the ultimate cost to the Government when scarce technical and project personnel are diverted from their primary responsibilities because of administrative deficiencies. The cost is more than just the time of the technical people involved; important technical projects are unnecessarily delayed.

Since technology builds on work performed rather than on work contemplated, on construction rather than on systems analysis, delays impede our technological growth. You lose 6 months here and 6 months there while contracts are being negotiated, while audit reports are being submitted, while those who have authority are deciding whether or not they will exercise it. When you add these delays all together over a 10-year period, 2 or more years may be lost in terms of technological advancement. In today's environment and with today's problems, we simply cannot afford such slowdowns. I only wish our potential enemies were hampered with these problems created for us by overadministration.

As long as young men have to go to war, I firmly believe we should give them the best weapons we can build. I only wish it were possible for older people such as myself to go to Vietnam. I would be happy to do so. I have lived my life, but the young men we are sending there have not lived theirs. It is not proper to draft young boys, send them out to fight and take the chance of losing their lives, while at the same time defense contractors are making large profits.

There has been an aversion among the "decisionmakers" in the Department of Defense to take specific action on specific problems. They have a persistent urge to seek universal formula with which to justify particular actions. They dislike to discriminate. They want to find some general governing norm to which, in each instance, appeal can be taken so that individual decisions can be made, not on their particular merits, but automatically. They resort to directives that are more useful in protecting those who write them than in instructing those who receive them.

The administrative agencies we have set up in some cases have become thickets that prevent ideas from getting through, rather than agencies to encourage them.

I have an abiding concern for the success of our democratic form of government and for a quality of life which some present-day practices tend to destroy.

What is needed is that Congress act when others have defaulted in carrying out their responsibilities. If economy in government is what you want, sir, then what I have recommended seems to be an effective way to achieve it.

Chairman PROXMIRE. Admiral, you know the deep feeling we in Congress have for you. You can be sure we will give your advice and recommendations the most careful consideration. You have done the Nation a great service by coming here today and giving us such frank and detailed advice. Thank you very much.

Admiral RICKOVER. Thank you, Mr. Chairman. Many who appear before Congress have done more, but few have been treated better. It has been an honor to be here, sir.

Chairman PROXMIRE. The hearing is adjourned.

(Whereupon, the Subcommittee on Economy in Government of the Joint Economic Committee, adjourned, subject to call.)

APPENDIX I

NATIONAL PATENT POLICY

HEARING

BEFORE THE

SUBCOMMITTEE ON PATENTS, TRADEMARKS, AND COPYRIGHTS

OF THE

COMMITTEE ON THE JUDICIARY UNITED STATES SENATE

EIGHTY-SEVENTH CONGRESS

FIRST SESSION

PURSUANT TO

S. Res. 55

ON

S. 1084 and S. 1176

JUNE 2, 1961

Printed for the use of the Committee on the Judiciary

U.S. GOVERNMENT PRINTING OFFICE
WASHINGTON : 1961

COMMITTEE ON THE JUDICIARY

JAMES O. EASTLAND, Mississippi, *Chairman*

ESTES KEFAUVER, Tennessee
OLIN D. JOHNSTON, South Carolina
JOHN L. McCLELLAN, Arkansas
SAM J. ERVIN, JR., North Carolina
JOHN A. CARROLL, Colorado
THOMAS J. DODD, Connecticut
PHILIP A. HART, Michigan
EDWARD V. LONG, Missouri
WM. A. BLAKLEY, Texas

ALEXANDER WILEY, Wisconsin
EVERETT McKINLEY DIRKSEN, Illinois
ROMAN L. HRUSKA, Nebraska
KENNETH B. KEATING, New York
NORRIS COTTON, New Hampshire

SUBCOMMITTEE ON PATENTS, TRADEMARKS, AND COPYRIGHTS

JOHN L. McCLELLAN, Arkansas, *Chairman*

OLIN D. JOHNSTON, South Carolina
PHILIP A. HART, Michigan
ESTES KEFAUVER, Tennessee

ALEXANDER WILEY, Wisconsin
NORRIS COTTON, New Hampshire

CONTENTS

NATIONAL PATENT POLICY

FRIDAY, JUNE 2, 1961

U.S. SENATE,
SUBCOMMITTEE ON PATENTS,
TRADEMARKS, AND COPYRIGHTS OF THE
COMMITTEE ON THE JUDICIARY,
Washington, D.C.

The subcommittee met, pursuant to notice, at 2:10 p.m., in room 2300, New Senate Office Building, Senator John L. McClellan presiding.

Present: Senators McClellan, Hart, Wiley, and Hruska.

Also present: Senators Anderson, Douglas, Gruening, Pastore, Saltonstall, Engle, Long (Louisiana), and Metcalf.

Staff members present: Robert L. Wright, chief counsel, Patents Subcommittee; Clarence Dinkins, assistant counsel; Herschel F. Clesner, assistant counsel; George Green, professional staff member; and Thomas C. Brennan, investigator.

Senator MCCLELLAN. All right, gentlemen, I think the committee may now come to order.

On behalf of the committee, I wish to welcome our colleagues who are not members of the committee who are here, particularly Senator Long who is the author of one of the bills that the committee has been studying, and the other Senators, Senators Gruening, Pastore, and Metcalf, who are not members of the committee. We are especially glad to have you because the witness we have this morning, Admiral Rickover, is one of the most prominent and most important among the personnel of Government today, particularly in the area of national defense and security, and in the course of studying this subject of patent rights and the Government's equity and interest in patents that arise out of Government contracts with the Government financing the project, we felt that Admiral Rickover had vast experience that would be helpful to this committee, and we sought his presence here today and invited him to come and testify and give us the benefit of his knowledge and of his counsel.

Admiral, we are happy to welcome you, and we appreciate your responding to our invitation. We want you to feel free to give your testimony, make your presentation in a way that appeals to you as being desirable and proper to get the information before us that you can give us.

If you prefer, we will let you just make a general statement without interruption, make such comments as you desire without interruption, and then members and visiting colleagues may ask you questions if you will permit us to do so.

TESTIMONY OF VICE ADM. H. G. RICKOVER, ASSISTANT DIRECTOR FOR NAVAL REACTORS, U.S. ATOMIC ENERGY COMMISSION, AND ASSISTANT CHIEF OF BUREAU FOR NUCLEAR PROPULSION, BUREAU OF SHIPS, DEPARTMENT OF THE NAVY

Admiral RICKOVER. Thank you very much for your kind and gracious words, Senator McClellan.

It is a great privilege to be here. It is both a privilege and a duty.

I have no prepared statement. I would appreciate that, at your pleasure as chairman and at the pleasure of the other distinguished Senators who are here, you interrupt me at any time and ask questions. I believe the problem can be more clearly developed by give-and-take questioning than by a formal presentation.

Senator MCCLELLAN. May I ask you then at this point, Admiral, if you have read, if you are familiar with the two bills that the committee has under consideration, a bill by Senator Long, S. 1176, and one by the chairman of the subcommittee, S. 1084?

Admiral RICKOVER. I am generally familiar with the bills; yes, sir.

Senator MCCLELLAN. You are generally familiar with them?

Admiral RICKOVER. Yes, sir.

I am primarily interested in the subject of patents as it relates to national security, the strength and safety of our country. I hope you will understand that everything I say flows from that concern.

I have not had the problem that contracting companies with whom I deal might refuse to work for the naval reactors program, because, subject to closely controlled exceptions, the law vests in the Government title to inventions made under AEC contracts. The reason is that the law removes the patent issue from our relations with contractors. It has not in any way handicapped us in obtaining from them contracts that are advantageous to the Government. The patent controversy is therefore not a problem in my own work.

But I am greatly disturbed that other agencies—notably the Defense Department which dispenses almost 70 percent of Government research and development funds—follows a policy of giving away inventions paid for by the American people. What disturbs me is not so much the fact—manifestly unjustifiable as it is—that individual companies may make a great deal of money out of inventions developed with public funds, but that this overgenerous policy has an adverse effect on our defense program. It is from this standpoint—the effect of patent giveaway policies on our national posture and strength in this period of extreme crisis—that I would like to talk.

Senator MCCLELLAN. Let the record show that Senator Anderson is present.

Senator ANDERSON. Thank you, Mr. Chairman, for the invitation.

Senator MCCLELLAN. Off the record.

(Discussion off the record.)

Senator MCCLELLAN. You said you had read the bills and were familiar with them?

Admiral RICKOVER. Yes, sir.

Senator MCCLELLAN. All right, proceed.

Admiral RICKOVER. Three years ago I testified before the House of Representatives Select Committee on Astronautics and Space Ex-

ploration. Legislation was then being considered for setting up the Space Administration (NASA). I was asked what I thought should be done about patent rights to inventions made with research funds that would be granted by the new Space Agency. I urged that the Space Act follow the rule laid down in the AEC Act, explicitly vesting in the Government title to inventions financed by NASA research funds. It seemed to me then—as it still does—that inventions developed with public money belong to the American public.

As finally passed by Congress, the patent policy laid down for the new Space Agency was in accord with these recommendations; it is essentially the same policy as that contained in the Atomic Energy Act. These two agencies are thus by law required to take title to inventions paid for by the American people unless it can be shown that the public interest requires some other disposition. The title policy is also followed by the Tennessee Valley Authority (TVA) and by the Department of Agriculture. A diametrically opposed patent policy, however, is followed by the Defense Department. Subject only in most instances to license-free use of publicly financed inventions by the Department itself, contracting firms are granted patents which give them a 17-year monopoly against the 183 million Amerimans out of whose pockets come all public funds dispensed by the Defense Department. All of these 183 million people are precluded, for 17 years, from benefiting from inventions for which they have paid with their taxes. The Defense Department does not sell patent rights—as any agency should be, of course, permitted to do provided no national security is involved. It does not bargain with contractors, granting patent rights as a quid pro quo for better contract terms. It simply hands over these rights as a matter of agency policy.

It seems to me important to pin point the difference between giveaway of public property by decision of a particular agency and dispensation of public subsidies to ailing sectors of our economy by act of Congress. Analogies are often drawn by defenders of the patent giveaway policy with farm subsidies, subsidies to shipping, other forms of transportation, et cetera. These subsidies are expressly granted by Congress. And Congress, in our form of government, is the only body that has the right to give away public property. In the case of these subsidies, moreover, a public interest in supporting particular segments of the American economy is involved. I do not see how one could make an analogous case for contracting firms obtaining Defense Department research grants. The firms who receive grants are a relatively few huge corporate entities already possessing great concentrated economic power. They are not ailing segments of the economy in need of public aid or subsidy. Nor is there any real need to offer patent giveaways in order to induce them to accept Defense Department research grants or contracts. I think it needs no special proof to say that Government contracts are and always have been highly lucrative and much sought after. To claim that agencies cannot get firms to sign such contracts unless patent rights are given away strikes me as fanciful nonsense.

So fas as I am aware, the only major case in point occurred when the drug industry refused Government grants for cancer chemotherapy and psychopharmacology research unless they were given patent rights to inventions made with public money. There was, I

22-490 O - 69 - pt. 2 - 8

believe, also the case of a firm refusing a NASA contract but in that case it was playing the Defense Department against the Space Agency. If we had a uniform Government patent policy, corporations could not do this. As I mentioned before, we in the Naval Reactors Group have had no difficulty obtaining contracts that are advantageous to the Government even though under the AEC Act we could not, if we wished, give away patents to AEC financed inventions.

The present situation is unsatisfactory. Agencies of the same U.S. Government pursue diametrically opposed policies on patent rights to inventions financed by the Government even when it may concern the same areas of technology, such as medical research where the Defense Department and the Department of Health, Education, and Welfare (HEW) follow different policies. This naturally makes for inequities. It leaves the power of decision on an important public matter that should be regulated by Congress to contracting officers of different agencies. As a result the House Appropriations Committee is insisting that the Defense Department should judge more strictly whether defense-supported medical research is limited to areas peculiar to military requirements. Furthermore, the Appropriations Committee felt that medical problems common to all our people, including those of miltary personnel, should not be investigated with Defense funds. Many people inside and out of Congress feel very strongly that the foundation of all agency patent policies should be the principle that inventions made with public money belong to the public, and that Congress should pass legislation requiring all Government agencies to proceed on that basis, with allowance for waivers in special cases, such as when corporations have contributed their own money to such inventions, or for bargaining purposes, that is, to enable the Government to obtain more favorable contracts. This is my own view. On the other hand, those who presently benefit from the patent giveaway policy of the Defense Department are making strenuous efforts to have that Department's policy made applicable to all Government contracts, most particularly to those of NASA. Leader in the attack against the AEC and NASA patent policy is the patent bar.

When $8, $9, $10 billion of public funds are invested in research, innumerable commercially useful inventions are bound to be made, in addition to those of primary military significance. Obviously, it is in the interest of the patent bar that such commercially useful inventions be privately patented since this will make for a good deal of lucrative patent business. When title to publicly financed inventions is vested in the Government, the patent bar may not derive any special benefit from the Government's vast research program. Hence, their extremely active support of the Defense Department's giveaway patent policy.

Senator LONG. Their influence is so pervasive that when last year the Government set up a study group to examine patent policy, this group went to the George Washington Patent Foundation for advice on what their position should be. The interesting thing is that the George Washington Patent Foundation is supported by the private patent lawyers and by inndustry, and they have an ax to grind. No one has a greater interest in preserving a system of taxing the public for private advantage than do the patent lawyers themselves.

Admiral RICKOVER. It has been my experience that the patent bar is a much stronger advocate of the giveaway patent policy than the contracting firms themselves. Of course, the firms get profits and other benefits from Government contracts whereas the patent bar depends wholly on the giveaway patent policy for extracting a benefit for itself out of public research contracts.

I would like to quote some remarks made by Senator Long before Congress last year which coincide exactly with my own experience: He said—

> the impression I have gained is that those who demand this unconscionable advantage are not so much those in big business as their patent lawyers. Most big businessmen with whom I have discussed the matter have quite readily conceded to me that what is sauce for the goose is also sauce for the gander; that if they employed someone to do research and development work for them, they would insist on retaining the patent rights for their company; and that it is logical for the Government to proceed on the same basis.

I cannot see how one can make out a convincing case for the right of patent attorneys to have their special interests considered in laying down Government policy on patents for inventions made under public research contracts. It seems to me we have here a clear conflict of interest between some 6,000 patent attorneys and the 183 million Americans who pay for Government contracts and to whose clear interest it is that useful inventions for which they pay should be promptly disclosed so that everyone can utilize them. Of course, advocates of the giveaway patent policy are silent on the advantages this policy bestows on the bar; their arguments proceed on the highest level of the American way of life, the free enterprise system, the Constitution, and so on.

The private interest of those who favor the giveaway patent policy has many advocates and is ably presented. Very few advocates defend the interest of the American people or of the Nation as a whole. I think it important that it be generally known that the principal defenders of the patent giveaway policy—as presently followed by the Defense Department—are members of the patent bar, and that in defending this policy they are defending their own special interest rather than the public interest.

For years the patent bar has very actively pursued the objective of preventing extension of AEC patent policy to other Government agencies. Particularly heavy pressure was exerted 3 years ago when the Space Act was under consideration by Congress. Nevertheless, in the end this act did incorporate the AEC patent policy. The patent bar sees this as merely a temporary setback. Though they were unsuccessful then, they are still in there pitching to reinstate the giveaway patent policy.

Senator LONG. Last year they actually succeeded in obtaining the help of some NASA officials who were advocates of the Defense Department policy, as they had come from there. Two such officials, for instance, were present at an important meeting of the Committee on Government Patent Policies of the American Patent Law Association on April 29, 1960. The meeting resolved once more that—

> the purpose of the patent system will be best achieved by the vestment of title to all inventions made by contractors in fulfilling research and development contracts, financed in whole or in part by the Government.

Thus NASA itself, without benefit of operating experience, on the recommendations of the patent bar, asked that the Space Act be amended to bring its patent policy in line with the Department of Defense giveaway practice rather than that which the Congress in its judgment had enacted.

Admiral RICKOVER. Since I am familiar with both the Defense Department and the AEC patent policy and with the effect both have on Government contracts, Senator Long asked me on April 8, 1960, to testify before his Subcommittee on Monopoly. With your permission, may I insert here my testimony before that subcommittee?

(The matter referred to is as follows:)

PATENT POLICIES OF GOVERNMENT DEPARTMENTS AND AGENCIES, 1960

Subject: Conference of Senator Russell B. Long, chairman, Subcommittee on Monopoly, Senate Small Business Committee, with Vice Adm. H. G. Rickover, U.S. Navy.
Place: Office of Senator Long.
Time: Friday, April 8, 1960, 9 a.m.
Present: Senator Russell B. Long; Vice Adm. H. G. Rickover; Benjamin Gordon, economist, Senate Small Business Committee; Robert Hunter, administrative assistant to Senator Long; Richard Daschbach, research assistant to Senator Long.

Senator LONG. Admiral Rickover, I want to know your views in general on the issue of whether you believe that when the Government buys research and development, the Government should take the patent rights or should permit the rights for commercial usage to go to the contractor.

Admiral RICKOVER. First, Senator Long, may I thank you for giving me the opportunity to discuss this matter with you. I appreciate testifying in your office where there are beautiful southern girls and the coffee is flavored with chicory. It is very unusual.

Second, I have no prepared statement.

Third, I am not a patent lawyer or any other kind of lawyer. I can only give you my views as they developed over a period of about 20 years in the conduct of research and development for the Department of Defense and the Atomic Energy Commission.

The patent situation today is quite different from what it was in 1789 when our Constitution was adopted. At that time, a patent was a matter that primarily concerned the individual; individuals were developing single items in a preindustrial age. Today, the development of patents generally involves large corporations and organizations. The U.S. Government alone is currently spending, in fiscal year 1960, nearly $8 billion for research and development. To grasp the significance of this sum bear in mind that the total expenditures of the U.S. Government for the 11-year period, 1789 to 1800, was less than $6 million. And in modern times the level of U.S. Government expenditures did not reach $8 billion until 1936.

Over the years I have frequently wondered whether in this modern industrial age patents are as important for industrial organizations as would appear from the statements made by patent lawyers. It may be that the patent lawyers are overemphasizing the present-day value of patents. It is quite possible our industry would not be hurt very much if we restricted the items that are patentable. I believe the important factor for an industrial organization is the know-how developed by it—the trade secrets and the techniques; these are not patentable qualities. They are something that are inherent in a company, in its methods, in its management; the kind of machine tools it has, how it uses these tools, and so on. Where the facilities are owned by the company itself, and where the know-how is its own; the Government shouldn't publish that information. When these conditions obtain, it is possible we have gone too far in making the information public.

Up to the advent of the Atomic Energy Commission in 1946 and the Space Agency in 1958 most research and development consisted essentially of adaptations to existing technology. That is, an industrial organization would be called upon by the Government to take an item it had already developed over a period of many years and change it to a new or improved item for military application.

On that basis there was considerable justification for the entrepreneur to maintain his background patent rights; he was merely adding a small novelty to an already existing item. But with the coming of atomic and space science, we have an entirely different situation; we are now dealing with equipment that has never before been used. In fact, most of it was never even conceived of. Consequently, nearly all the money for developing the complete item comes from the Government. I believe in the atomic energy field about 92 percent of the money being spent on research and development is supplied by the Government. It is for this reason I consider the existing patent provisions in the Atomic Energy Act and in the Space Agency Act fair and valid.

Where the Government bears all or nearly all of the cost, where the facilities belong to the Government, and where the Government bears all the risk, the people should own the patents. The American people are spending their money for the research and development; therefore, the patents should belong to them.

Senator LONG. Would that 92 percent be a conservative figure?

Admiral RICKOVER. It probably is. We are dealing with projects and with items that are novel, that have never before been developed. Furthermore, in nearly all cases the patents are being developed in facilities wholly or almost wholly owned by the Government; this is another compelling reason for rights to these patents to inhere in the U.S. Government.

Senator LONG. Admiral, I would like to read to you an excerpt from a speech delivered by a patent attorney. [Reading:]

"* * * may I remind you in the words of our Founding Fathers in the Declaration of Independence that I consider these truths to be self-evident: the American patent system is as old as our country, it is the best in the world, it is a fundamental part of our free competitive economy, it has contributed to the highest standard of living in the world, it has helped make America the strongest nation on earth, it will be as vital to our way of life in the age of space as it has been during our first 185 years as a nation, and any proposal which departs from the basic fundamentals of our patent system, no matter how gilded, must be stamped out as a thistle in a wheatfield."

What do you think of this statement?

Admiral RICKOVER. It's a good, ringing Fourth of July speech, Senator Long. It reminds me of an incident that occurred in one of the German States about 150 years ago. As part of a thoroughgoing reform of the judicial system, it was proposed to abolish torture as a means of obtaining confessions from persons accused of crime. A venerable jurist bitterly opposed this on the grounds that, since torture had been used for more than a thousand years, it must be good. Apparently, this man believed that anything that has existed for a long time must be good.

However, we are not discussing the patent law per se. No one is arguing that we do away with our patent law. We are merely discussing application of that law when the Government spends most of the money for doing the work. This is the real issue.

Senator LONG. Do you believe that the billions of dollars the Government is paying for research and development of new items are adequate incentive on the part of Government contractors to develop those items to the best of their ability?

Admiral RICKOVER. Yes, sir, I believe a most important factor motivating a company to seek out and undertake research and development for the Government is the realization that, instead of spending its own money, it now obtains these funds from the Government. One frequently hears it said the Government doesn't pay enough profit to companies performing research and development; that whereas the Government allows, say, only 5 percent profit on research and development contracts, the companies can make 10 percent or more on ordinary commercial or Government business. But that is not a valid argument. A company may spend, say, 1 to 2 percent of its gross income on its own research and development work; but when they do Government research and development they thereby get large additional sums of money to do such work. In this way they enhance their competitive position without having to use their own money. You will find many large corporations where the level of Government research and development they do is considerably more than they spend on their own research and development. In essence Government-financed research and development subsidizes and augments their own research and development effort, and so enhances their competitive position. These companies realize that in order to stay in business, to be healthy, to prosper, they must do research and development work.

The very fact they constantly keep on urging the Government to give them more research and development contracts despite the supposedly low profit rate is ample proof of the great value they attach to obtaining such contracts. Our large corporations are more aware of the desirability of doing Government research and development than the small companies.

We have had no difficulty in the Atomic Energy Commission getting contractors, large and small, to do research and development work. In fact, many of them are constantly urging us to give them such work. Further, a number of companies have built their own facilities, with their own money. Many businesses want Government research and development work in order to develop a strong position. They now wish to extend this to the atomic energy and the space fields.

Senator LONG. Contracts themselves are profitable, but those contracts, even if they do not have private patent rights, also lead to additional products if these companies are forward-looking, competitive companies developing products of their own outside these Government activities. Would you agree with this statement?

Admiral RICKOVER. Yes, sir. They develop many ideas and skills from this Government-financed work; also, their people are being trained and schooled at Government expense. These are very valuable assets, and the reason so many large corporations vie to obtain these research and development contracts. Now I can only consider this problem in the light of my own experience. I have never had a single case where the patent provision of the Atomic Energy Act influenced a company not to undertake Government R. & D. work. In fact, many of the very same companies who operate under the Department of Defense patent provisions, which are far more liberal to them than the AEC rules, not only accept research and development work under the Atomic Energy Commission patent rules, but even urge us to give them more such work.

Senator LONG. Do you have any indication that the companies charge you more to do research and development if they are not permitted to keep proprietary or commercial patent rights?

Admiral RICKOVER. No, sir; I know of no such cases. They are nearly all cost-plus-type contracts and the fees are about the same throughout the Government. Nor do I agree with the statement frequently made that unless there is such a patent provision, their employees will not work assiduously. I have never seen anything of the sort. A man who has an idea in his mind, if he is worth his salt, will want to get it out. He will fight all obstacles to get it out; it really makes no difference to the scientist or engineer one way or another because the company gets to own the patent rights anyway.

Now, the companies apparently take a different stand toward the Government than they do to their own employees. Their own employees must sign an agreement providing that the company takes title to the patents they develop. Apparently, the companies desire better treatment from the U.S. Government than they accord their own employees.

Senator LONG. I was talking to a young man who worked for an oil company about its research program. He told me that when he went to work for the company, he was required to sign a contract that said that anything he developed would be turned over to the company. Now he said that he didn't have to sign that contract, but he felt that if he was going to take the job, the company had every right to ask him to sign it. And yet his attitude was that if the company, in turn, was going to work for the U.S. Government on a project to be wholly paid for by the Government, it was no more immoral for the company to be asked to let the Government keep the patent rights than it was for him to be asked to let the company keep the patent rights if he went to work for that oil company.

Admiral RICKOVER. That is tantamount to what I said. I agree with you that companies in the employ of the Government should receive the same treatment from the Government as they give to their own employees. In Great Britain, as you know, there is a different system. There, the patent rights for work financed by the Government belong entirely to the Government; the Government licenses industry and even shares in the royalties industry receives from non-Government applications. In Russia, the Government, of course, owns all patents. So here we have three different patent systems working side by side. I know of no evidence indicating that the British or the Russians are being held back because they have not copied our patent system. One of the reasons the Russians have been able to make rapid progress is because they

disseminate technical information faster than we. They probably lead the world in the thorough and rapid dissemination of scientific and engineering information. I believe this is pretty good evidence there is little to the argument that unless we give industry full rights to patents where the Government has paid for the work, our economic system would be hurt. I doubt that very much. Perhaps there are too many patent lawyers in the United States.

Senator LONG. Here is another problem that concerns me, Admiral Rickover. It seems to me that if I had a company working on something that could conceivably be of immense value—for example, suppose I was trying to develop a new fuel that might be the fuel of the future; perhaps the fuel that could put a satellite into outer space or do things present fuels will not do. If I were able to achieve it first and to obtain a patent on it, that patent would be of enormous value in future years. Now, on the other hand, if my competitors were working on something similar to that, it seems to me that there would be an incentive on my part, looking after my pocketbook and stockholders, to tell my engineers: "Fellows, don't tell anyone about this thing. Hold onto it until we are able to get a patent on it." Does it occur to you that that logic might from time to time operate on work under Government R. & D. contacts?

Admiral RICKOVER. Yes, it could, except in the case of AEC and NASA work. In these fields the law places ownership of patents initially in the U.S. Government. This gives the Government the opportunity to make them available to everyone. In my opinion, this is a good system because it makes new information available quickly. Otherwise, there is the possibility of withholding information. All of our industry benefits greatly from free use of Government patents. As you have stated, it is essential in the race with the Russians that we do not handicap ourselves by delaying the emergence of new developments. The Russians have no such handicap.

The object of the patent system was to further human welfare and happiness. Take the medical profession, for example. As far as I know the medical profession rarely patents anything. New procedures, techniques, and instruments developed by doctors and medical researchers are free to be used by anyone. This is a noble attitude by a noble profession, and I have never heard it said that our doctors are loath to increase human health and happiness because they would not receive exclusive right to their inventions. And to illustrate the human misery that can result from undue secrecy there is the famous case of the first practical obstetric forceps. It was invented about 1600 by Peter Chamberlen, an English obstetrician. It was kept by the Chamberlens as a family secret for nearly a century. They wouldn't let anyone else know about it. So here we have a case where countless mothers were subjected to needless pain—pain that could have been avoided had that knowledge been made public. But the Chamberlen family kept it to themselves in order to retain a monopoly; they enriched themselves at the expense of human misery. This illustrates in a homely sort of way, a way a man can't understand but a woman surely can, the importance of not withholding information. Today I believe it would be considered unethical for a man in the medical profession to try to patent something of that sort.

Senator LONG. As a matter of fact, isn't it true that when most doctors develop a new procedure for operations, they are anxious to go to a medical society meeting and explain their new procedure so that other doctors might find it advantageous for humanity?

Admiral RICKOVER. Yes, sir. As I said, the medical profession is the most noble and ethical profession. Nearly every doctor is dedicated to improving the health and happiness of all humanity. I believe we could well adopt that same principle in many other fields. We would do well to have our scientists, our engineers, our industrial leaders, our Government servants, and our educationists emulate our doctors.

Furthermore, you must bear in mind we are not talking about the ability of industry to obtain patents when they use their own money. Even in the atomic energy field or in the space field, if you spend your own money you take title to the patent, except for weapons. Last year more than half the patent applications in the atomic energy field were filed by private industry. We should urge industry to spend more of their own money for research and development—in which case the patents will belong to them and they will build up a position of their own.

It may interest you to know that 90 percent of patents for peaceful applications in the atomic energy field are developed by 10 to 11 of the AEC contractors. There have been only three cases where contractors have objected to the AEC

patent provisions. These objections were based on the fact that the language of the contract was too all-inclusive; that the language took in more than was required for the actual performance of the contract. These three cases were not important ones. The AEC, I understand, intends to recommend changing the language.

No one has suggested in any instance I know of that industry can't have patents. We must sharpen the problem and point out that the real issue is whether patents, the development of which is paid for by the Government, belong to the people or belong to industry. That is the real issue. We are not discussing the patent system per se.

Furthermore, there is here involved a matter of broad national policy. At present, instead of Congress examining the patent situation, we are permitting each agency to decide for itself. I do not believe Congress should abdicate its constitutional rights and duties and permit any individual agency in the executive branch to set up its own rules which by perpetuation over a period of many years finally assume the force of law and then are used as precedents. The tendency of Government agencies is to let things continue as they are. It is easier for them this way; they don't have to think or to hurt anyone's feelings. It is also easier to have a simple rule such as the Department of Defense has, rather than to judge items on a case basis. I believe the application of our patent law should be considered as a general policy matter for the entire Federal Government; and that Congress should not permit each agency to set up its own rules. That, in effect, is like having several different Federal laws to cover the same subject.

I believe it is in accordance with the intent of the patent law that the Government should own patents resulting from work it has financed. In other words, the Atomic Energy Commission and the National Aeronautics and Space Administration patent rules are in consonance with the law, and not otherwise, as some would suggest.

Senator LONG. Now, isn't it also true that a great amount of basic research and development is not patentable at all until it has been developed into a practical application?

Admiral RICKOVER. Yes, sir. And that is why we have so many companies come to the Government, urging they be given Government funds to do research and development work; this will give them a better competitive posture in industry.

Almost every area in industry is now subsidized by the Government and since they have become accustomed to subsidization, they naturally desire patent rights also because this further helps to subsidize them.

I believe that patents should generally belong to the Government where Government money is used to develop them. In special cases where a great deal of prior work has been done by a company, an exception could be made. An exception could also be made in the case of small business if this is considered necessary by Congress to preserve our free enterprise system. But, aside from these exceptions, where the Government pays for the work the patent should belong to the Government.

Senator LONG. Now, Admiral Rickover, where you have several contractors working on similar problems for the Government, each one of whom has more than a hundred scientists and engineers working in their employ, isn't it to the advantage of the Government that every time one group or one team of scientists and engineers discovers something new that is useful, it should be immediately made available to all the others so that they can start working forward?

Admiral RICKOVER. Yes, sir; I definitely believe it should. This of course, is the intent of Congress in appropriating Government funds—that they be spent efficiently and effectively. Such interchange of information will add to the efficient and effective way of spending Government money. Isn't this exactly what our industrial corporations do? Do they not immediately make available to all of their divisions what each division invents or learns?

Senator LONG. Well, would there not be an incentive if a contractor could see the possibility of large profits for himself by holding back on this information until he can patent it? If hundreds of millions or billions of dollars are involved, wouldn't there be some incentive to hoard and to conceal what he knows, until he is in a position to protect himself with patent rights?

Admiral RICKOVER. Yes, it might be, and I believe there have been cases—these are a matter of record—where organizations have held inventions back in order to protect their future competitive position.

Senator LONG. I believe one of the witnesses of the Defense Department, one in charge of patent matters, who had been with industry as a patent lawyer, mentioned that some concerns find it advantageous when they have something very good, not to patent it, but to hold on to it, feeling that when they patent it, it becomes available and other people then start finding out how to achieve the same thing by a method which would get around that patent.

Admiral RICKOVER. I believe we should reevaluate our patent policies in the light of the present situation—where we are faced with an implacable foe who uses every means to achieve decisive military strength as fast as possible. It is important in this critical stage in our history to reconsider the patent policies and procedures from the standpoint of whether they are aiding or impeding our national progress. Today, there is no essential difference between military and civilian technology. So anything that holds up one, also hurts the other. As I said previously, the patent problem that faces us today was not envisioned by the founders. They lived in a preindustrial society—a society where a patent resulted from the efforts of an individual, not of a large organization.

Senator LONG. Do you have any idea or any judgment as to what you believe the people at the working level, the actual scientists and engineers, who are doing the technical and developing work, think about this matter and this issue?

Admiral RICKOVER. The men working on a Government project surely know it is the Government that is actually paying their salary. I have never found a lack of desire to do good work, just because it was being done in a Government laboratory instead of a private laboratory, or because the work was being paid for by the Government. When a company hires a man, they pay him for all his talents, including his ability to invent.

Mind you, sir, we must stick to the point; we are not now discussing our patent system; we are only discussing whether the Government should retain rights to patents for which it pays. To the individual scientist or engineer who makes the invention or contributes to it, there is no financial difference anyway. The company gets the patent rights; not he. If he is a good man, if he makes an invention or otherwise makes himself of greater value, he will be promoted and his pay increased whether the company is paying his salary directly, or the Government indirectly.

Senator LONG. As I understand your position, from your last statement, if the Government hired a contractor to develop something for the Government, the contractor, scientists, and engineers are actually working for the Government, notwithstanding the fact that the contractor is interposed between them and their Government.

Admiral RICKOVER. Yes, sir. As far as they are concerned, they do the same in either case, and get the same treatment.

Senator LONG. In other words, if I were a scientist working either for the AEC or a contractor of the AEC, I would be smart enough to know that I am actually working to develop atomic energy for the U.S. Government.

Admiral RICKOVER. Yes, sir. There is an analogy between this situation and the one that obtains in education—one of my favorite subjects, as you know. The National Education Association, a self-admitted lobbying organization, assumes to speak for the teachers. The NEA is constantly saying what they suppose the teachers to be thinking. The teachers rarely speak for themselves. However, I receive many letters from teachers who say: "Please don't quote me; I thoroughly disagree with the NEA, but I am afraid to talk." In the case of patents, everybody is talking for the scientists and engineers except they themselves. The patent lawyers are always telling us what the scientists and engineers think. Now, I happen to deal directly with many scientists and engineers; I have not heard them express the thoughts on patents as espoused by the patent lawyers.

Senator LONG. Would you care to elaborate further on what you do detect the attitude of scientists and engineers to be?

Admiral RICKOVER. The scientists and engineers? Why, I don't believe they have ever given this matter serious thought. It makes no difference to them anyway. As citizens, they probably would prefer that the patents belong to the Government.

Senator LONG. Well, as far as they are concerned, they are smart enough to realize whether they are working for a contractor or for a Government agency directly that they are working for the Government.

Admiral RICKOVER. Yes, sir. This is similar to the question I am asked about our nuclear submarines—whether we have a morale problem with the sailors because they are submerged for such long periods. I answer that we don't; since

there are no psychiatrists aboard these submarines, the sailors haven't found out that there is a problem, so there isn't any. Possibly, if there weren't so many patent lawyers, we wouldn't have so much of a patent problem, either.

Senator LONG. Admiral Rickover, have you given any thought to the problem involved in some of these contracts where it is provided that the Government, in letting a contract to develop some item, will accord the Government a royalty-free license to use this item for the Government, but that in no event will the Government be permitted to use this development to provide services to the general public?

Admiral RICKOVER. That, of course, is the system used by the Department of Defense, but not by the Atomic Energy Commission. Now, industry, for example, gets a great deal of benefit from the Government-owned AEC patents because they are rapidly made available to everyone. Many new developments in the atomic energy field are expedited because industry is able quickly to learn everything that has been developed and to build on that. This is a good way to get things done fast. It could even be that in this revolutionary and rapidly spiraling scientific and industrial age this is a faster way to develop our country industrially than is possible under the present patent system with its restrictions. Perhaps our patent laws should be investigated to see if they serve the intended purpose well.

Senator LONG. It has come to my attention that in a certain contract—I do not believe this was the usual case, but an exception—concerning the development of weather control systems, an attempt to develop weather control, one contractor was able to obtain a contract with a provision that anything developed under this contract could not be used to provide general services to the public. If we are ever able to develop some system to control weather, can you see much use that the Government would have for weather control, except to provide general services to the public?

Admiral RICKOVER. I definitely believe we should not turn over any element of weather control to a contractor.

Senator LONG. Well, the Government is working on weather control methods, Admiral Rickover. Assume that we eventually find a system whereby seeding the clouds might make the rain fall in the area where we want it and to prevent it from falling somewhere else. Would it not be rather extreme for us to have a provision in those contracts that the device which the taxpayers have paid to develop could not be used for their benefit?

Admiral RICKOVER. Such a provision I consider wrong, sir, because it is tantamount to the taxpayer underwriting somebody to get a patent which stops the taxpayer himself from using his own resources. Such a situation should not be permitted to occur. It may have been an oversight in the particular contract you mention.

Senator LONG. How can public policy permit any such private patent? Now, Admiral Rickover, your achievements in developing the atomic submarine are rather well known. Have you found that the inability to accord private patent rights to individual contractors has impeded the development of the atomic submarine?

Admiral RICKOVER. Categorically, I say "No." It is the same as the case of the psychiatrists in submarines. Having never heard about this situation, I didn't know there was a problem.

Senator LONG. Where you have a large number of contractors working on parallel projects, would you personally feel that progress would be impeded if each one had the right to take out patent rights and have property rights in the secrets they developed?

Admiral RICKOVER. Yes, sir; I believe there would be. With the system in use in the Atomic Energy Commission, all of this information is shared.

Senator LONG. And you have no difficulty in persuading anyone to share what he develops as fast as he finds it?

Admiral RICKOVER. I didn't know until this morning there was any difficulty.

Senator LONG. Do you have any knowledge of problems that exist in any other field outside of your own, where private contractors do not have the right to keep patents?

Admiral RICKOVER. I have heard there are cases in other fields, but to the best of my knowledge, when one attempts to substantiate these cases, they seem to evaporate. In fact our problem in the atomic energy field is we have too many contractors who want to do work under our patent conditions, and not the other way around.

Senator LONG. So, as far as you are concerned, you have no knowledge of any difficulty in persuading contractors to do the work for you.

Admiral RICKOVER. No, sir. I have difficulty keeping contractors away who are trying to persuade me to give them more work.

Senator LONG. Do you have any questions, Ben?

Mr. GORDON. Senator, I have a question, but I think that you covered it already. But this, perhaps, looks at it in a more general way and I wonder if I could ask it. We have received complaints that the policy of giving away patent monopolies to contractors has a tendency of hampering the dissemination of new scientific and technical knowledge, at least until it can be patented or exploited. What do you think of this? Does the AEC policy prevent this kind of a situation.

Admiral RICKOVER. There is a definite possibility that such a policy can hamper dissemination of scientific and engineering information. The present AEC and NASA policies tend to encourage rapid dissemination of information. This is of great help in developing a new technology. Mind you, we are talking about new technology which it is incumbent on us to develop as rapidly as possible from a national standpoint. We are not discussing the patent situation per se. You and I are not now talking about doing away with our patent system. We are merely discussing whether the Government owns the patents it has paid for. We are only talking about a particular aspect of the patent problem.

Senator LONG. Do you have knowledge of any companies who take the attitude that they are not interested in doing work for the Government unless they can keep private patent rights?

Admiral RICKOVER. I personally have never heard of any, sir. There may be some, but I have never encountered one. If a company attempted to do business with me that way I'd go elsewhere without a moment's delay. If we have to depend on any one company in the United States to do Government work we are in a pretty bad way. We had better see to it, without delay, there is another. This issue we are discussing also touches on the problem of national interest versus group interest. I believe too much of group interest obtains in the United States. At this critical time in our national life we should not permit any group interest to predominate over the national interest. Because if our country is not strong, neither will any of the groups in our country be strong. They all derive their strength from our Nation.

Senator LONG. Thank you very much, Admiral Rickover. You are always frank, and you give us your best advice.

Admiral RICKOVER. Typical of the arguments advanced by those who advocate the give-away of Government-financed inventions are remarks recently made by a vice president in charge of research of the Minnesota Mining & Manufacturing Co. He said that we are presently in a technological race with Russia in which we are lagging behind in two main areas—space and atomic energy. To quote him verbally:

> It is more than a coincidence, I believe, that these are the only two areas thus far where there has been Government interference with the normal functioning of a patent system. This clearly indicates to me that Government control of patents has already reduced incentive to a point where this country's dominant position as a world power is in jeopardy.

I am glad Senator Anderson is here to answer this irresponsible accusation. He has been a member of the Joint Committee on Atomic Energy since its inception. He has also served as the chairman of that committee for several years. I believe the United States leads all others in atomic energy, and that this leadership is due in large measure to his wisdom. Would it be appropriate, Mr. Chairman, for me to request you to ask the Senator if he cares to make any comment? If the vice president of Minnesota Mining & Manufacturing is right in his claim that the AEC patent policy is responsible for our being allegedly behind Russia in the atomic energy field, then I think Senator Anderson is largely responsible for our losing our dominant position.

Senator McCLELLAN. Senator Anderson, do you wish to comment?

Senator ANDERSON. Yes.

I do want to say to you, Mr. Chairman, that I was glad to come here because I think Admiral Rickover has made a tremendous contribution to this country, and no small part of what he has accomplished has been due to the patent situation that this man complained about.

Would I be permitted 2 or 3 minutes?

Senator McCLELLAN. Certainly, Senator. Go right ahead.

Senator ANDERSON. When the first work was done at Arco under Admiral Rickover's direction looking toward the development of a good reactor, when it was developed sufficiently far enough Admiral Rickover told the Joint Committee that he could build an atomic submarine. He was, of course, criticized by some of his associates in the Navy. Nobody would be foolish enough to try to trust the lives of seamen in an atomic submarine. But he came to the Joint Committee and kept pleading his case, and under the then leadership of Brien McMahon, Senator Hickenlooper and others, Mr. Cole and Mr. Holifield and Mr. Van Zandt, they believed him, and I went along with them because they had had great experience in this field.

He showed us a model one day that didn't look as if it was possible, but it was possible. And a nuclear-propelled submarine was constructed.

That is the only field, up to date, in which we know we are ahead of the Russians. We do know that in the field of nuclear-propelled submarines we are substantially ahead of them. We would have stayed there, I think, if we hadn't made an exchange of plans with the British in exchange for certain information they supplied us.

The Joint Committee unanimously asked the people in charge not to make the transfer of plans to the British because we were afraid that their security was not as good as ours and might fall in the hands of the Russians. That, I assume, has happened because there has been a theft of plans, and people know that the only persons interested in stealing them might be the Russians.

But we were ahead and far ahead in that field.

Now there was a byproduct to that that ought to be of interest to American industry. The submarine that Admiral Rickover built worked. Not only does it work but the subsequent models like the *Skipjack* work and work fantastically better, I think Senator Pastore would tell you, than the original *Nautilus*. The *Nautilus* was a little clumsy compared to these attack submarines that they have which just operate like a sports car. It is the difference between driving a truck and a sports car with these two submarines.

But, as a result of that, the American people who were interested in development of utilities became attracted. In the eastern part of the country, under the leadership of Mr. Webster, the Yankee plant has been constructed. The admiral can tell you more than I can tell you about the design, but I believe it is safe to say that it follows exactly the design of the Shippingport construction.

Admiral RICKOVER. The reactors that industry has built and is building to a great extent are based on the technology which was developed by my project and other Government projects, projects that were paid for by the Government.

Senator ANDERSON. Yes.

We went along and built the Shippingport plant, which is very expensive. It costs lots of money to maintain because it is doing the research work for the private companies, and when they built a plant as Mr. Webster did, I don't believe we charged them anything for the patent rights.

Admiral RICKOVER. No, sir.

Senator ANDERSON. It is open to the public.

Furthermore, when Willis Gale of Commonwealth Edison in Chicago got ready to build a plant, he debated a long time and talked to me on the telephone and said, "I don't think I ought to do it, but I am tempted to." And I helped tempt him a little bit, and they built a very fine plant in Chicago, the Dresden plant.

The technology of the Dresden plant is a direct successor of the technology of the first reactors at Arco, the *Nautilus* plant, the Shippingport plant and the great line that has followed along in these other plants, and I think no small part of our extremely good success in certain types of ventures is due to the fact that we have had this policy of the Government owning what it paid to develop and making it available fully to every manufacturer.

Senator Pastore knows better than anybody. We had a long discussion with the Italians, the French, the Belgians and others about entering an organization such as EURATOM. EURATOM was going to build some powerplants, and we were called upon to make some guarantees as to the life of certain cores. The thing looked as if it was going to cost a great deal of money to the United States, but it won't because, by the time they get ready to build, there will have been enough work done at Shippingport by the expenditure of Government money so that the private companies who were going to test these cores, either General Electric, Westinghouse or Allis-Chalmers, whoever may build them, will know what to do.

And I just want to say I was somewhat, I hope, helpful in seeing to it that there was written into the Space Act the same general guarantee that we had in the Atomic Energy Act, namely, that when the Government spends billions of dollars out of its Treasury, the patents belong to all of the people of the country, freely to be used by anybody without any royalties paid to anybody, and that, I think, has worked very well indeed.

I don't know where this man from this company got the theory that these programs were in such bad shape. The British are trimming down their plan substantially because they have had some difficulties and they found the power reactors aren't as cheap as they thought they were going to be. We even have information that the Russians have somewhat changed their power reactor program, that they are attracted a little bit to the use of the midstream which we have found advantageous, and I know that there has been a substantial change in their programs and the British programs.

I think the British will eventually go to the gas cooled type of reactor that will work very well, but so are we.

All of these have their ancestry back in the work the Government did, and I didn't know that Admiral Rickover was going to turn to me as the culprit, but I am glad to be the culprit because we in the Joint Committee on Atomic Energy felt that a fine job has been done in this field.

I know that the Space Committee had to take it on faith, but I believe before they get through the Space Committee will recognize it as extremely valuable.

Senator LONG. May I just ask a question at this point. Would the experiences of the Manhattan project tend to support your argument, or support the argument of the gentleman from Minnesota Mining & Manufacturing Co.

Admiral RICKOVER. I think it is not only the Manhattan project, but what we have done since and what we are doing now. I think it is all Government research. If it is looked after and followed through properly, it would support the argument that when the Government spends billions of dollars belonging to all the people of the country for research the results should be made available to all U.S. industry, research companies, universities, and individuals.

The reason I mentioned the statement of this industry official is to show the absurd extremes to which some people are going to defend their right to our patents paid for by the taxpayers. It is generally recognized that the United States is the leader in the atomic energy field. But this man, who apparently knows nothing about the whole matter, makes public statements claiming that we are behind in atomic energy and in space because of the patent law.

Senator LONG. I wonder if he is one of these Department of Defense contractors who has some connection with this outer space deal. It is only on military contracts which do have these private patent rights that we have, so far, suffered our greatest scientific defeats.

Admiral RICKOVER. Yes, sir. He doesn't know too much about what he is talking about in the space program, either. You can't blame our position in space today on patents or any other single cause or person. There are many deeper reasons that underlie our present position in space. Certainly if we had started in space at the same time that we started in atomic energy and if we had had the vigorous leadership of such men as Brien McMahon and Senator Anderson and others, we wouldn't be in this fix. We were years behind in space science and technology activities when the National Aeronautics and Space Act of 1958 was enacted. Furthermore, we have tended to underestimate, and we lack the ability to evaluate, the past and present potential of our competitor in the space race. There is also the fact that American industry is geared to mass production and is not used to producing custom-made items where far greater precision and accuracy is necessary—as in the missile and atomic fields.

It is all too easy to look at everything in terms of one's own particular interest. Arguments blaming Government patent policy for real or alleged delays in atomic energy and space developments have no basis in fact, but they are constantly reiterated in speeches made by advocates of patent giveaways. Perhaps I took unfair advantage of Senator Anderson by springing this on him here but I did want to nail down this ridiculous accusation by this official of Minnesota Mining right here and now. It is typical of many things that are being said against AEC and NASA patent policy. This committee does not often get a chance to get an instant refutation such as the one just given by Senator Anderson. I appreciate this very much, sir.

Senator ANDERSON. Well, I would like to add just one more thing, Senator McClellan.

Whatever has happened in space, all the lag that we may have developed took place a number of years ago. We have been making great strides in the last couple of years. And in those last 2 years it is the only time that this prohibition of patents has been in the law. Previously space development was entirely in the general field of the Defense Establishment where they had no statutory rule whatever on patents, and that is how badly off this man—I didn't catch who it was; you said Minnesota Mining—is because it has only been in the last 2 years, only since we wrote the space bill that the patent provision has applied to space activities of NASA as I recall it. And during those 2 years I think we have made extremely fine progress and have some possibility of catching up with our adversaries a little bit in that field. It is going to take time. We have a long way to go. But if ever there was proof of the patent situation, that ought to be it. And on atomic energy, as I say, in the field where they turned atomic energy loose, we developed faster than other parts of the world, and we realize now how much faster.

Senator McClellan. Thank you.

I wanted to let the record show that immediately preceding Senator Anderson's comments, Senator Wiley, a member of the committee, and Senator Engle had come in the room, and the remarks I made at the opening, in my opening statement, welcoming members of the Senate who are not members of the committee, apply to them and all others who may come in. We appreciate having you.

All right, now, Admiral.

Senator Wiley. Mr. Chairman, may I apologize for being late, but the kind of schedule that we have got now almost drives a fellow into some kind of a condition. Four different subcommittees and one Senate, and now your committee here.

The point I want to get at: what were you discussing when I came in? The practicality of giving to the Government the patents, exclusive patents where the ideas evolved as a result of Government expenditure of funds? Is that the thing you were talking about?

Admiral Rickover. I had started to, Senator Wiley. I have not yet discussed it. I believe the major subject of discussion this afternoon is what patent rights the Government should have in research and development for which it pays. I had not gone into that yet. I was about to start, sir.

Senator Wiley. Well, did it relate to all patents or patents that you might say were necessary in governmental defense?

Admiral Rickover. No, sir. It relates to all patents, because today you cannot make a distinction between inventions of purely military value and inventions that have other uses. Virtually all inventions have repercussions beyond their own narrow field. That is the essential difference in the patent situation today as against what it was 50 or a hundred years ago, and especially as it was when the first patent law was enacted by Congress in 1790.

For example, take Eli Whitney's cotton gin. That was a simple device that could stand on its own. You could identify it easily, it had very little relation to anything else. That was generally the nature of patented inventions until about 1870 or 1880. But you cannot patent anything in any field anywhere today that doesn't have an immediate and direct effect on everything else we do.

The arguments of the patent lawyers disregard this scientific and technological fact. In seeking to prevent extension of the patent policy of the Atomic Energy Commission Act to other agencies, a favorite argument of theirs is that atomic energy is such a narrow and specialized field that one might conceivably justify special patent rules for the AEC but this would not apply to other fields in which agencies make research contracts—notably NASA and the Defense Department. This is a fallacious argument. The impact on other areas of inventions made in the atomic energy field today is very broad. For example, nuclear reactors are used to generate electrical power, propel submarines and surface ships, create medical and industrial isotopes, explosives. And I believe this is true of virtually all inventions made under Government research contracts, whether they be in space or in public health or in agriculture. This is why, in my opinion, the whole patent situation should be considered anew.

I also feel that this subject you are now considering may have a greater effect on the ultimate strength, welfare, and safety of our country than many of the other matters to which Congress is devoting considerable time. This is so because the patent problem is a basic issue. If you don't settle it, if you don't provide for better incentives for individual inventors and for rapid outflow of new technological information—and that is what the strength of any country depends upon today—everything else falls.

I would like to discuss the patent problem from two standpoints. First, the specific one; namely, do we have difficulties in the Atomic Energy Commission because we retain patents? And why does the AEC follow a different policy from the Defense Department? I can show you that I am able to obtain equally advantageous terms for the Government whether I contract under the Defense Department or under AEC; in neither case do I presently contract away the title of the Government to inventions made with public funds. I should like to stress this point.

The other point I want to emphasize is that perhaps this is a good time to reexamine the legal and historical basis of patents. Patent lawyers in general take the position that the patent law as it now stands is something as constant and fundamental as an 11th Commandment—a solemn rule handed down by God to Moses on Sinai. They sometimes argue that unless the patent law remains exactly as it now stands the American standard of living, our free way of life, free enterprise, and what have you will crumble.

I am no patent lawyer but I have taken the trouble, since I was asked to come here, to more fully familiarize myself with the subject. It has been my experience that many apparently complex subjects rest upon simple basic principles. These can readily be understood by laymen who will take a little time to investigate the matter.

Experts are often so concerned with complexities that have mushroomed around basic principles that they lose sight of these principles, so a layman can contribute something. He can contribute a mind uncluttered with technical details. Not infrequently problems that expert opinion concluded were permanent and insoluble have suddenly disappeared when circumstances have shifted or new minds have tackled them. I am of the considered opinion that on this patent issue a body of shrewdly competent experts have been needlessly confusing the relatively simple principles on which the patent law rests.

Now what we have is a controversy as to who in law owns title to inventions made under Government contracts. Going back to the origin of patents, to the purpose for which they were intended, may help clarify the issue. I beg your indulgence if I speak of matters with which many of the Senators present are, no doubt, far more familiar than I am.

Patents are a survival of so-called letters patent which used to be issued in large numbers during the Middle Ages and through the age of mercantilism. These were open (hence the word "patent") royal letters announcing to one and all that the possessor had been given by the monarch exclusive rights to some specified office, privilege, or commercial monopoly. Originally, the purpose of letters patent granting industrial or trade monopolies was promotion of a public interest; namely, expansion of the Nation's industry and trade, of the national economy. It was then believed that the best, if not the only way, to induce people to invest large capital sums in new industries or trading ventures was to guarantee them freedom from competition, that is, a monopoly.

It is, of course, characteristic of monopolies that they allow charging all the traffic will bear, while under a free competitive enterprise system prices are brought in line with reasonable costs and profits through the working of the marketplace. Well-known commercial monopolies protected by letters patent existed for necessities such as the manufacture and sale of salt, vinegar, oil, starch, paper; for products requiring special skill such as printing, glassmaking, mirrormaking, and so forth; for trading ventures such as those of the monopolistic East India companies.

Though commercial monopolies by letters patent were enormously beneficial to those who obtained them, it is important to keep in mind that it was then believed these individual benefits ultimately served a public interest in that they strengthened the economy of the nation.

In time the public interest was disregarded by monarch who granted letters patent to court favorites or sold them to the highest bidder in order to enrich their privy purse. In the reign of James I, Parliament finally put an end to the whole system of private monopolies and privileges through its Statute of Monopolies of 1624. One exception was reluctantly made, one type of letter patent was allowed to survive, the patent granted to inventors. For a limited time a monopoly under the patent was allowed in order to encourage inventors to invest their brains, time, and money in research. It was believed that this was the best, if not the only, way to induce people to produce inventions.

Though a patent monopoly is valuable to the inventor, permitting him to exploit his invention without fear of competition, it was then, and still is, believed that these benefits to inventors ultimately serve a public interest in that they promote economic growth through technological progress. To further this public purpose government temporarily walls off the area of knowledge covered by a patented invention and keeps the public out; it allows the patentee to erect a barrier across one step in the technological ladder where he may either levy tribute or bar the way entirely if he decides to "sit" on his invention.

The 1624 Statute of Monopolies contains the first formulation of conditions required for the granting of a patent and of the limitation

22-490 O - 69 - pt. 2 - 9

in time of the monopoly privilege patents confer. Our own first patent law of 1790 incorporated the same basic formula. So did most other national patent laws though there are variations in emphasis. Thus French law considers the inventor's right to a patent as a natural right, German law regards the patent as a contract between inventor and society, English law retains something of its earlier attitude that patents, being monopolies, should be regarded with disfavor by the law.

Industrial nations have influenced each other's patent legislation. Patents are not peculiar to the American way of life or our free competitive enterprise system. American patent practice differs chiefly in that we are less concerned to reward inventive genius than some other Western industrial nations who have recently been changing their laws to return to the original principle of patent law of rewarding individual inventors. In our country the common law master-servant doctrine which gives the employer a right to all inventions made by his employees has been further strengthened by the common practice in industry to demand an express waiver of rights to inventions as a condition of employment. German patent law declares such contracts null and void unless the inventor retains some interest. So have the courts of a number of other continental nations.

American patent practice differs, too, in that we are just about the only Western nation where the Government grants patent monopolies for a mere fee and does not put the patentee under some continuing obligation, either to pay an annual tax on his patent or to work it within a given period of time—usually 5 years—on pain of forfeiting the patent. Also, we permit patents to remain in force for a longer period than many other nations—17 years. The original formula set down in the 1624 Monopoly Statute was 14 years. With knowledge now doubling every 9 years, it seems unduly long to authorize a barrier on the ladder of technology lasting 17 years during which time no person may use the invention without paying tribute to the patent holder.

When defenders of the giveaway patent policy argue that contracting firms have a right to patent inventions made under Government contract they demand for themselves a different status than they are willing to give their own employees and subcontractors. Mass production and the virtual disappearance of the independent inventor have changed the intended purpose of the patent law which was to encourage individual inventiveness. Patents now largely do not go to the inventor but to those who employ him and provide him with necessary facilities. By depriving employed inventors of any right to the products of their inventive brains, industry has precluded itself from making a valid claim to inventions paid for by Government funds. Once you disregard the claims of talent, know-how, and personal effort in favor of the claims of monetary investment in research, you have to accept the fact that patent rights lodge entirely in whomever pays for the research that produces inventions. There is no merit in arguments that somehow there should be a different law between private and public research investment.

(Senator Saltonstall entered the hearing room at this point.)

Senator McClellan. Senator, we have before us two bills. One just outright says that all inventions, patentable inventions arising out of Government research or contracts where the Government pays

for the work to be done, the title shall be in the Federal Government.

Now there are those who contend that there ought to be modifications; and there are some who think the Government ought to get only a license to use, a royalty-free license to use and not title, that the title should stay in the corporation that had the contract.

So it is on these measures and another bill by Senator Long that we have been holding these hearings.

Now the contention is made—many contentions, among others—if the Government has title to it, it doesn't get distribution, it doesn't get out and get applied.

Another is that the Government had no right to take more than just a license to use it for itself. It had no right to commercialize it or prevent the company or the individual from commercializing it even to the exclusion of others. And there are various issues like that.

We have different things happening now in the Government. With the Atomic Energy Commission the Government usually takes title to everything. In the Defense Department it doesn't; at most it only takes a license. And in other agencies there are different policies and practices.

The thought about it is that maybe the Government should have a uniform policy and that it ought to be fixed by law.

Now that is what we have been studying, and Admiral Rickover here can refute, as I understand it, the contention that if the Government takes title you are not going to get contractors interested in doing your research and so forth; they will say "Well, that is some incentive to us. If you take that away from us, we are not going to be interested."

Now, I think Admiral Rickover's experience refutes that. So we wanted to get him in and get the benefit of his knowledge, the knowledge he has gained from experience, and his own ideas as to how the equities of the Government should be taken care of and what should be written into the law.

Admiral RICKOVER. You see I am in a peculiar position where I am responsible for contracts both for the Atomic Energy Commission and the Defense Department at the same time. So I see both sides of it.

I can tell you very clearly that I have not had difficulty in getting contractors to take Atomic Energy work or Department of Defense work even though they get no patent rights. I can get contractors on Department of Defense contracts to agree to the same terms we set in the Atomic Energy Commission. So there is no problem.

I think the problem has been created largely by the patent lawyers themselves. Last year, when Senator Long asked me to testify to his subcommittee, I told him I didn't know there was a problem. This is why I was so amazed.

Now I have heard that the Space Agency has had some difficulty with one or two contractors not being willing to undertake work on account of the patent provision in their act, but I am sure they will find many others who will. I have heard also that in at least one of these instances, the cryogenic gyro contract with General Electric, the reason was that agencies of the Department of Defense gave the contractor the identical contract without even retaining a license for the Government to manufacture and use the invention—an outright gift of Treasury funds—whereas the Space Agency is required by

the patent provision in its act that even where it waives title to the patented invention it must retain a license for the Government's use, and the use by any ally of the United States under treaty agreement.

Furthermore, if we get into a situation where some big company won't undertake work for the U.S. Government except on its own terms, then we are in a pretty bad way.

Senator LONG. Could I ask just one question?

Here is the question that you might know something about, and you perhaps have thought about it. I am worried about this.

It seems to me that if you have got three services—the Army, Navy, and Air Force—each with a certain amount of jealousy between them, and then if each of them lets contracts, let us say, to 50 contractors, each of them working on a related aspect or perhaps the same aspect of a problem, why are the Russians getting so much more thrust in their missiles? They are up there with 14 tons. The best we have been able to do is 5. They had 5 up with Sputnik II 4 or 5 years ago. Why are they getting so much thrust?

Suppose some fellow comes up with an idea, checks it out, and finds it will work. Well, it would appear to me that this fellow would be in a position, if he is going to have a patent on it, to have control, because for 17 years nobody can use that for commercial travel.

If you can just push yourself up 100 miles and make a speed of 17,000 miles an hour and bank your engines on the way down, that would be the future means of all long-distance travel. Instead of traveling at 30,000 feet, you travel 100 miles up.

Now, it would seem to me that if a fellow has got the idea that it will work, in the public interest he ought to say "Tell everybody," and all scientists then move forward to the next frontier of knowledge together. But it would seem to me if he has got this thing, the idea could result in a fantastically valuable patent. He would say, "For Pete's sake, don't let Lockheed know about this. Don't tell a soul. Keep it a secret until we are in a position to file our patent application." And that, it seems to me, creates a Tower of Babel in your DOD research program because each fellow has an ax to grind, has a personal advantage in not communicating to his neighbor.

Admiral RICKOVER. Senator Long, you will notice in this morning's paper that the Secretary of Defense has insisted on seeing the research reports each individual service gets, because he found out that the Army, Navy, and Air Force were spending money and getting results that they wouldn't show to each other. So he now wants to check for himself. This is the sort of thing I am advocating.

All of you, of course, are familiar with the internecine warfare that goes on inside the Department of Defense. We are fighting among ourselves right in the Pentagon with more energy than we are fighting our potential enemies. This goes on all over the country—in government, in industry, and by patent lawyers, too.

It seems to me we have two big problems: First, how to increase incentives for employed inventors who get no benefit whatever out of the patent system as it has evolved; second, how to improve dissemination of inventions so there won't be needless time-consuming and expensive duplication of effort. Increased inventive activity and better dissemination of knowledge about inventions are key factors in strengthening the economy and hence the international stature of the United

States, so we cannot be indifferent to what our chief competitor is doing. The Russians are presently doing better than we on both counts. I would like to mention this here.

Someone remarked it is political suicide to suggest that the United States might learn something from another country, particularly from a country whose economic and political system we abhor. To suggest that there are areas where we are not superior to everyone else in the world has come to be regarded as almost a form of treason. But we are presently living in a period of extreme danger to our own country and to the free world. This is not the time to worry about personal disadvantage that might result from speaking about unpleasant truths. I hope I don't have to waste time explaining here how utterly distasteful Communist theory and practice is to me before I proceed to report that nevertheless the Russians have a pretty effective system to stimulate and utilize the inventive genius of their people. Strangely enough, it is a system that would not basically run counter to our own free competitive enterprise system.

First, as to rewarding individual inventiveness. It is possible to obtain a patent in Russia. They have a patent system. But few people apply for patents since there is an alternative, much simpler, and also more advantageous system whereby the individual inventor can obtain a monetary reward for his invention, their system of "certificates of authorship." Anybody with a new idea can file for a certificate of authorship at no cost to himself. This entitles him to a monetary reward depending largely on how much saving is made in industry by using the certified invention or idea. By Russian standards, the monetary reward is substantial, certainly substantial enough to stimulate inventiveness. Last year they had 60,000 applications; 60,000 applications by individuals. That year we had 80,000 patent applications, 70 percent of them assigned to corporations, not to individuals. It seems to me that this shows their system is advantageous to the indidual inventor. Other satellite countries, such as Bulgaria and Rumania, have similar incentives directed at the individual inventor.

As for Russia, about half the applications for certificates of authorship are normally granted, 90 percent of them within a year. Russian law requires processing of these certificates within 6 months, but this they have not yet been able to accomplish. But they do process patents much more quickly than we in this country. We, too, validate roughly half the applications for patents, but it takes about 41 months to do so and of course it is done at the expense of the applicant. The Russians employ about as many persons to process certificates as we do in our Patent Office to process patent applications. It looks as if in a short time their certificates will just about equal our patents in number.

Patenting an idea benefits the country because it involves an available printed disclosure; the quicker a country gets the inventor to disclose, the speedier will be the country's technological progress. The Commissioner of patents says one reason for delay here is that companies applying for patents are often loath to have them processed rapidly.

Senator LONG. Why would they be loath to have the patents processed?

Admiral RICKOVER. I will tell you why.

If a man has a lot of capital invested in a particular way of doing business and has grabbed hold of an invention that would make all this obsolete, though it would in the end make for greater efficiency, he might well prefer to sit on the invention rather than utilize it, delaying patent processing so as to give out as little information as possible. There are numerous cases where there is inadequate disclosure or no real disclosure at all; where a company decides that, "now I have this new device; I can use this know-how, but it is more advantageous if I just keep it to myself as long as possible." Now this is a viewpoint strictly limited to consideration of what most benefits the company itself. Multiplied, it will keep our country from benefiting from the inventiveness of our people. And while companies thus are busily engaged in looking out for maximum profits, technological progress may be artificially halted. The information is bottled up for 3 to 4 years during the period of application. Thereafter, even though the information is available, tribute must be paid to use it, of course. In the meantime, the country that is our chief competitor speeds technological progress by promptly disseminating and utilizing all useful new ideas.

We always talk of patents as if all they did was stimulate inventiveness. Yet the patent law as it now stands may permit artificial suppression of the fruits of native inventive genius. This is a serious matter when you consider that Russia bends every effort both to stimulate their people to invent by rewarding the individual inventor, and to make the quickest and most complete use of all inventions. Owners of certificates of authorship in Russia, if they are called in to aid in the development of their inventions, have all their expenses and salaries paid. Of course, there are no patent attorneys.

Now the second problem we have is to improve dissemination of information concerning new ideas and inventions. One of the basic reasons why governments of countries with a free competitive enterprise system are willing to set up and protect temporary patent monopolies in that in return for the grant of the monopoly a patentee must fully disclose his invention. It is immensely important that what has already been invented be known so that there will be no needless duplication of effort. Scientists and engineers must have easy and prompt access to such information. Most of them work in narrow fields and cannot possibly be familiar with all pertinent developments affecting their work unless positive steps are taken to bring these to their notice. Last April the staff of a Senate Subcommittee on Government Operations found our efforts to coordinate and make available information on research quite inadequate. Of course, the job is terrific. There are now more than 160,000 tasks being performed in the physical sciences alone, in about 9,000 research installations.

The staff report states that today there exists not even a complete inventory of the Government's own research and development program, still less of course of total national research. On the other hand, the Russians have an excellent system of collecting, translating, tabulating, and distributing technical information from all over the world. All of this goes automatically to all scientists who might find this information helpful in their own researches. Our Office of Technical Services of the Department of Commerce performs a simi-

lar function, but I do not believe it is making anywhere like as much useful material available as the Soviets.

Operating from the very highest level of Government, they have created a State Committee To Coordinate Research and an All Union Institute of Scientific and Technical Information to collect and distribute information and know-how, to prevent duplication, and to speed the introduction of new technology. One responsibility of these agencies is to encourage everyone to develop new ideas. To encourage individuals, mind you, sir; not industrial organisms but individuals. Another responsibility is to set up throughout the country additional centers of information—they now have 100 such centers—each making information available.

In our own country there is really only one place where information contained in patent disclosures is readily available—that is right here in Washington. There are a number of patent libraries in other parts of the country but the information is not so arranged as to make it readily possible for every individual to find out what is going on in the whole field of new inventions. The patent copies that he may consult are not broken down by their classifications or system. If they were, and if other necessary tools were made available we could progress much faster into new areas of knowledge. The cost of setting up information centers would be more than repaid by the advantages researchers would derive from them.

For years we have underestimated Russian technological achievements and, in particular, the thrust of their forward movement. One reason certainly has been that we lack a central information agency that quickly makes public what is published in Russian technical literature. This literature can be found in some libraries and bought in some bookstores but not everyone, especially our working engineers and scientists have easy access to it. It also takes a lot of time to locate the relevant material. Much of it has not been translated and, since reading knowledge of Russian is not wide-spread, will therefore escape notice. This would be nothing undemocratic in setting up a center to collect and translate Russian—and other foreign—technical publications.

To underestimate a potential adversary is dangerous. Knowing what he does is immensely important. We could not spend public money for a better purpose than to set up an agency in this country which would do for American inventors what the Russian information center does for theirs.

So far we have talked about ownership to inventions made with Government funds from a purely legal viewpoint. It is important to bring out that when Government takes title to publicly financed inventions it follows precisely in the footsteps of industry; it does no more than claim the same right that industry claims under existing patent law. But there is an additional reason—to my mind a far more important reason—why such inventions should belong to the Government. At best patent disclosures are not equivalent to the Government's practice of throwing new inventions into the public domain. The country is strengthened far more in the present technological race with the totalitarians when new ideas and inventions become public property than when they are patented. This is because these ideas, when they contain basic discoveries, are not merely useful in them-

selves, opening new opportunities for business, but are even more useful as stepping stones to further technological progress.

When they are in the public domain anyone with an inventive mind can build still more inventions upon those already made; but when inventions are patented they are walled in by the patent monopoly, and the vitally important decision whether they may or may not be used as stepping stones remains for 17 years within the discretion of the companies whose commercial interest may well make it preferable for them to keep these ideas under wraps. The advantage of vesting title to publicly financed inventions in the Government can be clearly seen in the atomic energy field.

The Atomic Energy Act requires the Atomic Energy Commission to make all information developed under AEC contracts immediately available to the public. We follow through on this. We go to great pains to carry out this mandate. We see to it that every new discovery and invention becomes at once part of knowledge in the public domain. There are none of the delays caused by processing patents and of course the disclosure is complete as well as prompt. In atomic energy, I think, we do as well as the Russians insofar as distributing information about new ideas and inventions is concerned. But in other fields I fear the Russians have the advantage of us.

Senator LONG. Admiral Rickover, the fact that our law provides that the man who is entitled to the patent right is the first one with the idea rather than the first one to make the application supports this program of these fellows holding out new ideas and new processes, something that they might subsequently get a patent on, doesn't it?

Admiral RICKOVER. Yes, sir. I would like to develop this point. I hope you will interrupt me at any time. I think you can see I feel very strongly on this subject.

Senator PASTORE. Could I ask a question at this point?

Admiral RICKOVER. Yes, sir.

Senator PASTORE. Would you make a distinction between a contract that is competitive and one that is cost-plus?

Admiral RICKOVER. Are you talking about research and development, or are you talking about procurement of material, sir?

Senator PASTORE. Well, on either one, depending on the type of contract. I mean where you throw out a contract on a competitive bid, you might have some competition which might involve certain rights that might evolve to the competing contractor if he were to compete with all of his adversaries. But where you have a cost-plus research program I don't see that there is any question at all but it all should belong to the Government. That is the way it is done in the AEC. I mean you have given that as an example, but most of our contracts in AEC have been cost-plus. I mean, to me, you wouldn't have an argument on principle at all. It would belong to the Government.

Admiral RICKOVER. Senator Pastore, I actually make some research and development contracts on a fixed price basis. I manage to do this in some cases because I give the companies a sum of money which they think is large at the time, but it actually works out that it is cheaper for the Government as it forces the contractors to put good people on the job and do the best he can.

Senator PASTORE. That is true, and in that particular case I see no harm in the Government owning outright——

Admiral RICKOVER. But we are talking about research and development, and normally you don't make research and development contracts on a competitive basis. They are normally cost-plus fixed fees.

Senator PASTORE. That is what I said. It makes a difference, a big difference. Anyone who undertakes an obligation with the U.S. Government and is being paid his cost plus a profit has no right to complain that the invention belongs to the Government because he stands no chance of losing anything. He is not gambling on anything.

Admiral RICKOVER. Well, the way companies deal with inventors among their employees is to have them sign away their patent rights as a condition of employment. If you want to work for a company you have to agree to their rules; that is all right. But when the Government makes a research and development contract with the same company, the company claims that now everything is different. When these companies make contracts for R. & D. using their own funds, they insist on having complete rights to everything that is developed, just as they do with their own employees. Yet when they themselves are being employed by the Government, they say that is different. They say the Government can't do what the companies do; that it must let them have title to inventions. This is the issue we are talking about. The companies want a double standard.

Senator PASTORE. Well, why haven't you had any difficulty? You say you haven't.

Admiral RICKOVER. For two reasons. In the Atomic Energy Commission I am protected by the law. In the Department of Defense I have been able to use the AEC patent provisions.

Senator PASTORE. I realize that, but the point I am getting at here is that are we suffering from the lack of law or from a lack of good administration?

Admiral RICKOVER. The way the Department of Defense handles patents was all right as long as they were dealing with items that had already been developed by industry and merely needed some small adaptation to make them suitable for military use. This was true of virtually all Government contracts with industry up to World War I and of a lot of them even through World War II. The Department of Defense contracted for already-existing items needing only minor changes. Under those circumstances it was just and legally correct that companies supplying these items should retain commercial rights. No major research at Government expense was involved in the contract.

But patent policies which were right at that time are wrong today because now the Defense Department contracts for wholly new devices, things that don't yet exist. The major part of all the research and development in the United States is now paid by public funds awarded by the Defense Department to contracting firms. Inventions made with these public funds obviously belong to the American people. Yet the Department just hands them over to the contractors.

We are having all this agitation in favor of changing the Space Agency patent policy to conform to that of the Defense Department because the Space Agency now dispenses huge public funds. As I said, the fight is led by the patent bar. All the people who fought against the Atomic Energy Commission patent policy and against enactment of the same policy in the Space Act of 1958, are now concentrating on getting the NASA Act changed because they can readily

see that with billions of tax dollars to be spent by NASA, a change in patent policy would bring much lucrative business to the patent bar.

Senator PASTORE. You would certainly have no trouble with me on the principle you enunciate. I am with you 100 percent. I am merely trying to find out if you would work it even in the case of competitive bids.

Admiral RICKOVER. I don't think the issue arises. Competitive bids generally enter where you have a completed item.

Senator PASTORE. In that particular case would you allow the contractor to retain the rights to his invention?

Admiral RICKOVER. Only if he developed the invention with his own funds, not if the whole thing was Government-financed.

Mind you, sir, we are not arguing here whether or not a man who invents something by investing his own money should have the right to patent this invention. There are a good many patents even in the atomic energy field that have been granted to people who have spent their own money to develop them. They own these patents. We are not arguing about that. We are not arguing about taking patents away from a man who has spent his own money to invent. That isn't the issue at all.

Senator SALTONSTALL. Mr. Chairman, may an outsider ask a question?

Senator MCCLELLAN. Indeed, Senator.

Senator SALTONSTALL. Admiral, is there anything in the distinction being made between a patented article that is valuable only to something that the Government wants as opposed to a patented article that might be used by the Government and also might be used by industry? I have in mind, for instance, something to do with the power of thrust up to the moon, or something to do, we will say, with a submarine or something of that character. Could you draw a line?

Admiral RICKOVER. No, sir, I don't think you can draw a line any more because you can develop hardly anything today which doesn't immediately have application elsewhere.

Suppose a company developed over a period of many years a gear which it used and it was necessary to use this gear in a space vehicle. The Government couldn't take the right to that patent. It wouldn't be fair. We are not arguing that at all.

On the other hand, take the case of Raytheon. That name has been mentioned.

The Raytheon company got its real start during the war with Government research and development contracts. They have publicly stated that their success is almost entirely due to money invested by the Government in their research work and that their commercial business has not been profitable. I believe nearly 100 percent of their research funds comes from the Government. Yet Raytheon officials are going about the country making speeches castigating as inequitable the AEC patent policy because it vests title to Government-financed inventions in the Government. So a company almost wholly financed by money collected from the American people complains bitterly that inventions under the AEC and NASA Acts belong to the people, saying this great country of ours would cease to be great unless we gave them title to publicly financed inventions.

I believe there is an important difference when contracts between Government and industry involve mere adaptation of existing items as against when they involve development of wholly new items. My position is that today most Government research and development contracts are of a latter kind. At any rate this is so in atomic energy, space, and the Defense Department.

Suppose the Government wants to develop a brandnew type of vehicle, and goes to Company Z and this company develops it and at that time there appears to be no commercial use for this new vehicle. This is the sort of thing you are talking about.

Senator SALTONSTALL. The duck, for instance, would be an example.

Admiral RICKOVER. There are, however, a lot of patentable things in the duck that are now being used in other parts of industry. That is the point. You can no longer make a distinction. That is why I consider a reexamination of the whole patent system is in order, not merely of patent rights for Government-financed research. It may be that our patent system is hurting us. Other countries have reexamined their patent systems and evolved new patent procedures. The Netherlands is the most recent one.

I mentioned the Russian case where essentially all inventions belong to the Government. But they use what we think of as capitalist incentives to stimulate their people's inventiveness. They do not automatically take new ideas from those who conceive them—as does industry here; as does Government too in most cases. They reward the inventor for turning over his invention to the Government. They give him this certificate of authorship that entitles him to monetary bonuses based on the usefulness of his invention. With these fine capitalist incentives they are getting increasing numbers of inventions from their people.

We might well consider whether we ought not to go back to the original intent of the Constitution and devise some reward for inventors, whether they are Government or industry employees. Actually a Government employee is today better off, unless the agency has the foreign and domestic rights, than an employee of a private firm because he may obtain title rights to foreign patents on his invention and can take these with him when he leaves his job. But if he is employed by a company, he has contracted away both domestic and foreign patent rights and when he leaves his job he will have nothing whatever to show for his inventive work.

The purpose of the patent clause in the Constitution was to protect the individual inventor. Now it is a curious thing that so far as I know the only important law enacted by Hitler that was retained by West Germany, for a period of years, is his law on patents which invalidates waiver of patent rights by employees and vests title to inventions in the man who actually did the inventing—not in the company that employs him. I understand Hitler did this to create greater material incentives and to make it easier for the individual inventor. He was about to start a war with all of Europe and did everything he could to improve German technical ability. He thought this could best be done by changing the patent law so that individuals would get title to their inventions. You don't have to approve of

Hitler to see that this was both an equitable and a practically useful change in patent law.

West Germany has for some years being growing at a faster rate under its free competitive enterprise system than we have, so their retention of this provision and its modification in 1957 has some interest for us. They have another interesting provision. Patentees have to pay a tax on their patent—this is in addition to the regular fee for obtaining the patent. The tax is relatively small to start off with, but after a few years it gets quite onerous so that a patentee who has not been successfully working his patent—thus making it useful to society—will eventually find it advisable to give up the patent and let others have a try at developing it.

England has another procedure designed to stimulate utilization of patents. Here is what the 1959 Encyclopedia Britannica says on this point:

> In certain cases the comptroller may grant compulsory licenses. Since the original object of the patent laws was the establishment of new industries, the main grounds for the grant of such licenses are that the patented invention is not being worked within the country to the fullest practicable extent, or that the demand for patented articles is not being met on reasonable terms, or is being met by importation in place of home manufacture. Other grounds are that the existence of the patent monopoly, or the terms imposed on licensees, unfairly prejudice the development of commercial or industrial activities. The owner of a patent of later date may also apply for a license on the ground that the earlier patent precludes the use of his invention, but in such a case the later patentee may be required to give a cross license (Patents, vol. XVII, p. 376).

All these foreign patent provisions attempt to promote production in the respective countries.

The Defense Department patent rules give the contractor commercial and foreign patent rights. The company can then manufacture the patented product developed under Government research and development in a wholly or partially owned foreign subsidiary and then exclusively market it in this country. Such actions could create unfavorable balance-of-payment situations for us. Under the AEC patent rule where the Government takes title to such inventions, other U.S. companies at least can have the opportunity to compete because they can obtain a license from the Government. Now to get back to overall Government research and development contracts.

Of necessity these Government research and development contracts go to a relatively few industrial giants who have the know-how and the facilities. Government contracts to some extent contribute to the undesirable concentration of industrial power in a small number of companies. If you are interested in helping small and middling business, you can't do it by demanding that the Government give them a larger share of research and development contracts; most of them simply could not meet the necessary standards. But you can help small business and help them immensely by making certain that title to inventions made with Government money belongs to the Government, for then these inventions are made public and can be utilized by everyone, instead of merely by the few large companies who are already being greatly favored by obtaining the major share of R. & D. contracts.

Senator LONG. I think 10 companies have got 70 percent of all this research and development money.

Admiral RICKOVER. Somewhat like that, sir.

Senator ENGLE. May I ask something?

I had a small research outfit come in to see me last week. They have, I think, about 65 people. They had a small contract with the Federal Government to do some research and development work which involved about $85,000, and it was only a little chunk of their business. And they came up with something which might have fitted into the particular research but which had been developed over their general operation. It had some relevancy, however, to this particular contract.

They disputed that it was directly involved. Nevertheless, the Government grabbed it off and asserted a proprietary right to that idea, and it ended up with some big company producing it. So what this fellow said to me from Los Angeles was, he said, "We have got to find a way to get clear in or get clear out because here we sit with a little old ragtag of a contract and we have developed something through our other resources which has some bearing, but not a significant bearing, and we lose these rights."

He said, "We are going to go in head over heels or we are going to get clear out." That is what he said to me.

Now that bears on the point you are talking about. I would like to think of some way to help these small outfits out in southern California—and we just have them by the dozens out there—that are in this research and development field—many of them on their own money; very few of them in the Government field—to get the benefit of what they develop. And they are the ones that bring up this type of complaint that I have heard, that they lose the proprietary rights to these ideas, and all of a sudden the research and development show up being produced by big companies.

Admiral RICKOVER. Senator, I would doubt that they would lose anything they had developed on their own. I am, of course, not familiar with the details of this particular case.

Senator ENGLE. These things do overlap a good deal.

Admiral RICKOVER. Yes, and you could make a policy. You might, in any law you enact giving benefits to small business, include a provision that gives them special patent rights. But then you will be up against the dilemma of defining small business. There are all sorts of definitions. One is 500 people.

What is it? 500 scientists or 500 ditchdiggers?

This is a dilemma you get into when you start making a law where you try to define these things. In my opinion, we should make sure that anything that is developed under Government contract is immediately made available to the public. I think the case you cited is not a matter of patent policy but rather a bad mistake made by a contracting officer who for some reason or other wholly disregarded the small company's rights.

Take another example. The Post Office Department made a contract with Food Machinery & Chemical Co. to develop a new post office. The contract provided that if some other Government agency or department wanted to use it or any patented inventions, they couldn't. If the Navy Department, for example, wanted to build the same type of office using inventions developed under this contract, they would have to make a special contract with Food Machinery or with one of their licensees, and pay royalties to them.

You get yourself into a situation like that which is nonsensical. This sort of situation shows we certainly ought to have a uniform patent policy in the Government. I always thought the Post Office and the Navy and the Air Force were all in the same Government although I am beginning to doubt that now.

The Constitution expressly vests the duty of making patent laws in the Congress, not in the Department of Defense or any other executive department. If you let every agency or branch of the Government make its own rules you are going to have a number of different sets of Federal patent laws. Once you set up these different rules it gets progressively harder to establish a uniform principle because the different agencies and their contractors get a vested interest in the way things have been done. It is easier to go along with these vested interests than to do a little thinking about what are actually the basic principles underlying patent law.

Also, letting each agency set its own policy leaves protection of the public, the taxpayer, to agency contracting officers who have no direct interest in the matter. A contracting officer is mostly interested in getting a particular contract signed and the material delivered. He isn't interested in seeing that some national policy is carried out. Anyway, this shouldn't be left up to him.

Senator LONG. Let me ask a question, if I might, Mr. Chairman, that has been going through and through these hearings.

I have heard a dozen witnesses say this kind of thing to me when I have conducted hearings for small business, and I hear them telling the Judiciary Committee this. We keep hearing this allegation that a company must have a patent monopoly in order to put out a new product, that if you don't give them a patent monopoly and they are going to have to compete with somebody, that they just won't develop and won't put out a new product. We have challenged the representatives of the National Association of Manufacturers—at least this committee challenged representatives of the National Association of Manufacturers.

I have challenged a number of witnesses who made that statement to produce a single example.

Admiral RICKOVER. Yes, I am familiar with that.

Senator LONG. They have never produced any to me. They made themselves look silly trying to hedge around on that issue.

Do you know in your field of atomic energy responsibility of any commercial application of something you have for which there would logically appear to be a present-day commercial market which is not being developed?

Admiral RICKOVER. No, sir. I don't know of a single instance. Incidentally, I have heard these statements, too, but I have never had them substantiated.

I have not experienced a single instance where a company has refused to take business because of the AEC patent law. I have only had one instance of a company refusing to take business at all, and this was because I insisted that they agree not to divulge what they were doing to foreign countries. That is the only case. It had nothing to do with patents.

Senator LONG. I have a different point. I think you somewhat misunderstood my question. What I had particularly in mind was this: Do you—for example, suppose you have some idea for a superior battery which would be charged in an atomic oven and put in an automobile. Do you know of any particular product that has been developed under the Atomic Energy Commission contracts for which there would logically appear to be a commercial market but which is not being developed or put out to sell to the public in the absence of a patent monopoly?

Admiral RICKOVER. No, sir. I know of no such case. I do know that people are coming around all the time to get money from the Government to do research to develop new ideas.

You will remember, sir, I told you last year that I was surprised when you asked me about this problem. Until you asked me, I didn't know that any problem existed. I know that TVA and Agriculture have had great success in getting their inventions utilized through nonexclusive royalty free licenses to all. There are maybe 1 in 500 more inventions that possibly might have a commercial market but are not being developed due to the absence of exclusive commercial rights. However, this may be due to the inherent risk of financing and introducing any new market item.

In my opinion, this problem is largely fabricated in the minds of patent lawyers. I have a specific recommendation to make which might solve this problem.

Why doesn't Congress enact a law to pay each of these several thousand patent lawyers the same pay he is now getting income tax free, and let him retire provided only that he doesn't get a replacement? I think that will solve your problem in a very cheap way.

This may sound funny, but it might be the most economical way to solve the problem.

Senator PASTORE. I take it you are not a lawyer.

Admiral RICKOVER. Sir?

Senator PASTORE. That you are not a lawyer.

Admiral RICKOVER. Well, I wasn't castigating all lawyers because I have a suspicion you are a lawyer, too, sir.

Senator PASTORE. No. I quite agree with you, Admiral.

Admiral RICKOVER. You don't agree on this retirement. Don't express yourself publicly on that, sir.

Senator PASTORE. No. All of the ballyhoo that I ever heard on patents was at the time we were considering the 1954 amendment to the atomic energy law. Before that time there was never, never any doubt in anybody's mind. We were in agreement that everything was secret. All of the contracts were negotiated on a cost-plus basis. All the inventions that were discovered became the exclusive property of the U.S. Government.

Now, for what commercial uses they have been put to I don't know. I know we had quite a squabble in 1954 when we amended the law and allowed private industry to come into the field. At that time the academic discussion came up about the patent law, but since that time we have had no trouble with it at all, and I am very much refreshed by what you say, that this was all news to you until this matter came to your attention.

But I quite agree that you ought to have a definite public policy on this, and I don't think that the problem is as simple as some of us have been trying to state it is. There is a great deal involved. There are a lot of problems. This isn't a simple thing. This isn't a question of killing off all the patent lawyers and solving it. I think the problem still would be with us.

Admiral RICKOVER. I am not so sure you would have so much of a problem if it wasn't fomented and agitated. They don't have the same problem in other countries.

Senator PASTORE. They have a different kind of economy. You mentioned Russia. In Russia everything belongs to the state.

Admiral RICKOVER. Look, we have a form of government which is dedicated to the greatest benefit for the individual, to preservation of individual rights. That is what we are all here for, and we want to maintain that. Yet we have stopped benefiting the individual inventor and we are giving everything to the corporation that employs him.

The Russians, who believe in state monopoly, turn around and benefit the individual.

For the last 30 to 40 years, all the theorists have been arguing that you can't have a viable Communist system, that it won't work. Meanwhile, it creeps up on us. The Russians now control half the people of the world. That is, the Communist system controls about half the people of the world. They are the second largest industrial power. They are increasing their rate of productivity at 7 percent; we at about 3 percent. And we keep on saying that their system is no good from a production standpoint.

The purpose of the U.S. Government is not just to support production. The purpose is freedom. And individual freedom may not always coincide with maximum production of consumer goods by giant business or with maximum business for the patent bar.

Senator SALTONSTALL. Admiral, if you are going to protect and improve the freedom of the individual citizen in the United States, which you say and which we all want, you have got to stimulate that freedom by the initiative that comes from the imagination and incentive that is given by the patents.

Admiral RICKOVER. I am all for that, sir.

But when you say that we must stimulate the freedom that patents give to imagination and incentive you are actually speaking of the individual inventor. Nothing is really created by a team or by an organization. Every new idea comes out of a single human mind. You can provide the environment where new ideas best flourish—which may be a group of people with good inventive minds mutually stimulating each other and coordinating their research findings—but in the final analysis it is always the individual who creates. The original purpose of the patent law was to stimulate individual inventive creativeness by means of a temporary monopoly set up and protected by government during which the inventor would have the sole right to use and benefit from his own brainchild. I am all for rewarding the individual inventor. I think he should get a specific reward for coming up with a useful invention; it should not be considered part of his regular duties and be appropriated automatically by his employer.

I am not against the idea of rewarding individuals. On the contrary, that is really what I am fighting for. But today we have a situation where the individual is not being encouraged to develop as many ideas as he could. Patent law, as it has evolved, no longer serves its original purpose as far as employed inventors are concerned and they are in the overwhelming majority. Fewer and fewer people are self-employed now. And under the master-servant doctrine the employer appropriates all the fruits of the inventive genius of his employees.

The point I would like to get back to is that over and beyond the question whether title to inventions made with Government funds does or does not vest in the Government, we should give some thought to the constitutional mandate which is not being fulfilled. The Constitution clearly states that the Government's purpose in granting patents should be "to promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries." Present patent policy does not accord very well with this purpose. For employed inventors the master-servant doctrine and the waiver to patent rights in employment contracts have completely destroyed this constitutional mandate.

Today somewhat more than 70 percent of all patents are assigned to corporations, yet a corporation obviously does not invent. These patents often aren't even earned by the corporation in the sense that it specifically paid for and guided research leading to the patented invention. The corporation has the right to grab every idea the inventive minds of employees may spin even if these are incidental inventions never contemplated or provided for by the corporation. Recently Life magazine told the story of an invention that illustrates my point.

A scientist employed by his company to develop a stronger tire cord experimented with cellulose. He noticed that mixing cellulose with water produced a jellylike substance. Because he had the kind of mind that could perceive unexpected ways to utilize a new phenomenon, the scientist instantly conceived the idea that this mixture might be made into a substance that would have all the characteristics of a food, yet no calories. Now he certainly had not been hired to dream up what Life called a nonfood but, in line with universal practice, the corporation paid him a dollar and appropriated his invention. With millions of Americans permanently on diets, the company is bound to make a nice profit out of this windfall. The invention has, of course, been patented. It seems to me that this cannot have been the intent of the Constitution when it authorized Congress to establish temporary patent monopolies.

Apart from the question of equity, I believe we dry up a source of inventiveness when we so completely disregard the right of the individual inventor. He will more and more be an employee either of a corporation or of government. Technology has now reached a level where individual tinkerers and mechanical geniuses no longer come up with really important inventions, or only rarely. More knowledge, more talent, and more expensive facilities are needed to invent anything important than in the past. The major manpower source of the kind of inventions that will move us ahead technologically, that will strengthen our economy, are the scientists and engineers. Yet, though

22-490 O - 69 - pt. 2 - 10

these have enormously increased in number, the ratio of the number of patents issued to them has been steadily going down.

Perhaps we ought to think about ways to stimulate them to be more inventively active by devising new ways to reward them. We need effective incentives. Nobody can force a man to invent or, when he has invented something, to disclose it to his employer. It has been true that scientists, especially physicians, working for universities or other nonprofit institutions rarely patented their inventions; for them the honor came when they published their findings, in some cases the professional emoluments, prizes, and the like, even the satisfaction of having added to the common fund of knowledge provided sufficient incentive. The case is rather different when a scientist sees his invention taken over and patented by his company which sometimes may not even permit him to publish his findings for reasons of their own and at their own discretion.

It certainly must discourage inventiveness to see one's achievement being blandly taken away, perhaps to be buried. The possibility of salary increases or advancement to higher positions in the company seems to me rather a poor reward and not likely to prove an effective incentive. The same applies to Government employees, although they at least obtain most of the satisfactions that spur industry men to engage in inventive activity. Also, we have had the U.S. Government Incentive Awards Program since 1954; this applies to Government employees only. We also have section 306 of the NASA Act of 1958. Section 306 applies not only to Government employees but could be applied to employees of industry also. However, much more along this line should be done. Particularly since new ways to reward individual inventiveness have been devised by a few of our companies, by other industrial democracies—and, of course, by the totalitarians—as I pointed out. I think that what a flourishing free enterprise country such as West Germany has done to bring its patent laws back to the original purpose of providing incentives for individual inventors has some relevance for us. Statutes and court decisions of European countries directed to the same end also have relevance for us.

(Senator Douglas entered the hearing room at this point.)

Senator LONG. Admiral Rickover, would it be a fair statement that if the Government does take title to these Department of Defense inventions that won't put all the patent lawyers out of business? As a matter of fact, even the Government prepares patent applications and files and prosecutes them. Maybe the Government might have to hire more of those boys. But in that event there would be work for them to do.

Admiral RICKOVER. No, I don't think it will put them all out of business, sir.

But you know I have been studying the preamble to the Constitution over and over again after reading all these mumbo-jumbo speeches of the patent lawyers and I can't find anything that says that the Constitution was adopted to protect either patents or the patent bar. What it says right there is that among other purposes for which our Government was established, it should promote "the general welfare." If we apply that test to inventions made with the people's money I can't see how you can have any doubts that it will promote the gen-

eral welfare to have these discoveries promptly disclosed so that they can be utilized by everyone. And, what is more important, that they become part of knowledge in the public domain from which we can then proceed to other new inventions. This is how technology advances.

In my experience, people in industry who are actually running the companies are not anywhere near as avid for this patent stuff as are the patent lawyers. This is so because the thing that counts today is know-how, and that is something you develop within a company.

I could give somebody the blueprints of a generator and he still couldn't make it properly. He would have to actually go into the factory and see how it is done. That is what a company gets when it takes a Government contract, regardless of the patent rights. It gets this all important know-how.

I believe the patent problem is way overrated. I am certain that if you talked to officials of the companies who are familiar with it, and if they gave it some thought, they wouldn't put anywhere near as much value on it as the patent lawyers do.

This has been my experience. When we have had difficulty in negotiating contracts I always ask that they remove the lawyers.

I'm sorry. I hope——

Of course, I am not referring to present company.

Senator PASTORE. Don't let it bother you. I haven't practiced law in 20 years. Don't let it bother you.

Admiral RICKOVER. I found out that when we could get to the officials of the company we got to doing business pretty fast.

Senator WILEY. Admiral, can I ask you a question.

It seems to me you made pretty clear what your position is in relation to situation No. 1, where the Government puts money into the contract. In that case you have said in substance, that there shouldn't be a patent granted except to the Government.

Now the other question that I am interested in is this: You spoke when I was coming in, about the atomic energy which has changed this world in which we are living. Did I understand you to say that you felt that the law was inadequate to deal with a situation where a patent is granted to an individual who develops it, and it is found that the patent relates to matters of the Nation's security. Is it your feeling that under present law there is not sufficient authority for the Government to reserve to itself the use of such patent?

Admiral RICKOVER. We have that authority now, sir. We can take control. The law today permits the Government to use any patented invention for governmental purposes, subject, however, to the right of the patent owner to sue for compensation from the Government. That is not in issue.

Senator WILEY. That is what I am asking.

Because we often have had bills before us in Congress to compensate folks whose patents we have taken.

Admiral RICKOVER. Yes, sir. We use a patent right on payment of reasonable royalty under section 1498, title 28, United States Code.

Senator WILEY. Well, then what is the real issue here, if we already have the law that provides for the Government to take the patent and pay for the taking, if such taking is for national defense?

Admiral RICKOVER. Yes, sir, but why pay again for something you have already paid for? Also we first have to know that there is something to take over.

Take the Ramo-Wooldridge situation which I am sure everybody in this room is familiar with. Here is a group that acted as an engineering agent for the Air Force, and the Government spent billions of dollars through them, and yet they got commercial rights to all patents the Government paid for developing. Ramo-Wooldridge was just a holding outfit, the Government financed the whole thing.

The profits that private firms make on Government-financed research and development contracts are considerable. Almost all these contracts are on a riskless, cost-plus-fixed-fee basis.

Even though the usual fixed fee may be from 6 to 15 percent the profits on their net worth are quite high.

Senator Long has pointed out in his testimony before your committee that Ramo-Wooldridge received fixed fees in 1954, 1955, and 1956 of 5.8 percent, 9.7 percent, and 8.1 percent. The return on their net worth, though, was 69 percent in 1956, 64.3 percent in 1955, and 30.8 percent in 1954, before taxes. And they are not even required to pay taxes on these large profits.

If you want to determine how well this company fared in comparison with the whole economy, you will find it was 9 times more profitable in 1956, 5½ times more profitable in 1955, and 4½ times more profitable in 1954 than all industrial groups in the economy. Also the officers, directors, and certain key employees did very well. In addition to their salaries, they received stock options which increased 346 times in value in a period of 5 years. To be precise, their shares went up in value from $45,000 to $15.6 millions.

There were three different types of patents with which they were concerned.

Senator WILEY. You want that changed?

Admiral RICKOVER. Let me tell you what they are. It partly answers your question. May I go on, sir?

One type of patent was for items of distinct commercial value. They were in an awful hurry to get the patents on those. So, without delay, they got on record that these patents belonged to them.

The second type of patent was for morale purposes, to take out a patent for the morale of the individual inventors, the scientists and engineers who worked for them.

The third kind had military application.

About those having military application—they were very slow telling anybody. Yet this outfit was set up to further our military interests. This is the sort of thing you can get into, sir. Furthermore, if the Government desired patent protection on inventions having military application only, the Government had to file for the patents, because Ramo-Wooldridge did not file.

Another example. The subcontractors who dealt with Ramo-Wooldridge were loath to give them helpful information because they were afraid Ramo-Wooldridge would take advantage of them.

Senator LONG. So here this company is with the contract, with several key contracts for outer space activities, trying to get us into outer space. Most of their contracts were for outer space.

Admiral RICKOVER. You know my feeling, sir, that practically everything you develop now has applicability anywhere. I don't think there is much distinction any more.

Senator LONG. Here is the point. Each one of these patent applications represented a new idea we needed to get into outer space. They were holding out on some of this stuff. They weren't telling the other man, who was still butting his head against a stone wall of ignorance trying to solve problems that had already been solved with U.S. Government money.

Admiral RICKOVER. Despite mandatory statutory language requiring them to keep each other informed of research activities, the Air Force and NASA spent a year having separate contractors develop identical space vehicles. The Comptroller General reported this wasteful duplication last year. He estimated it cost the American public more than $16 million plus a whole year of wasted research effort. Yet it probably was difficult for the Air Force and NASA to know what was being accomplished. This may be due to the strange theory being propounded by the patent lawyers, that it is supposed to be a good idea to withhold patent knowledge, information, and know-how because that forces the other man to work harder in order to find out what is going on in research.

This is like saying that when you run for office as a Senator, your opponent should be given a bonus of 50,000 or 60,000 or 200,000 votes; that this is a good thing, since it will make you work harder in order to get elected.

Senator MCCLELLAN. That theory will never be accepted and applied in politics.

Admiral RICKOVER. You have never accepted it in politics, but you are willing to accept it in patents, sir.

Senator MCCLELLAN. We may have already done it.

Admiral RICKOVER. We can't really get away with that any more, because knowledge is very fragile. You just have to get it out quickly.

With the present patent law you permit people, even Government contractors and grantees to withhold this information.

Senator LONG. And you give them an enormous financial incentive to do it. That is the problem as I see it.

Admiral RICKOVER. You know how it is with many of these companies. Take the aviation industry where some outfit comes in with a relatively small amount of capital, gets the facilities paid for by the Government, gets all the research and development paid for by the Government, and then gets control of all the commercial and foreign patent rights. Our allies if they adopt an American weapon or weapons system, in order to use or manufacture such weapons, must then negotiate a patent licensing agreement with the American companies who developed these products under U.S. Government research and development funds and who hold the foreign patent rights. This can involve payment of royalties to these American firms by the foreign government. This is an intolerable situation and you get into it by not claiming for the Government its legal right to Government-financed inventions.

Senator LONG. This particular outfit you mentioned classified 11 of their patents as being sufficiently basic to control an entire new industry.

Admiral RICKOVER. That is right, sir.

Senator ENGLE. Which was that?

Admiral RICKOVER. Ramo-Wooldridge.

Senator HART. Admiral, running through these hearings—I think Senator McClellan may have gotten the same impression—is the desirability of a uniform law with respect to the treatment of patents resulting from Government-financed undertakings.

I know you make the point that everything is the same, but there has been some very good testimony from small business people that they are the segment of commerce which would suffer most if the offshoot idea that they come up with cannot be protected in their hands in order to finance this consumer marketing.

Admiral RICKOVER. Senator Hart, I would have an adjudication, possibly as called for in the Space Act, which could grant title to the patent to small business if it is in the public interest, with the Government retaining a license. Also if the company had already done something themselves or owned related patents, they would get credit for it. I would not take this away from them. I think that would be illegal. It would be morally wrong. But since all except some 2 to 3 percent of Government research money goes to large corporations, we really don't run into this particular problem. The problem comes when research is almost all Government financed, and the contracting company nevertheless wants not only to hold on to title to inventions but also to delay disclosing them. There is a case on record—I believe Senator Long mentioned it at one time—where an investigation was made of a certain company to see how they handled information. When it was information they wanted to acquire from Government and other research activities, they had a large and efficient group to obtain the information at once and to disseminate it among all their own divisions as fast as possible. But when it came to information they had developed under Government contract, they were not so fast in getting it out. So that other companies, large and small, were delayed in benefiting from this new knowledge. They delayed sometimes for a year. That is the difference.

Now here is where it applies to small business: I should think if I were a small businessman and wasn't able to support a large research information group, I would like to be able to get all this information as soon as possible and use it on the same basis as the large corporations do, particularly where the Government pays for it.

I don't see that small companies are particularly disadvantaged when the Government takes title to Government-financed inventions. Of course, whether the company be large or small, if the work they do under Government contract is based upon research they had previously completed with their own funds, they must certainly be compensated for what they have done. They have an equity in their own research work. I would never suggest that such an equity be taken from anyone.

Now here is another point I would like to take up. With knowledge now doubling every 9 years, it seems to me we ought to consider lowering the time limit of patent monopolies—perhaps to coincide with this 9-year period. It makes little sense to have a monopoly period of 17 years today when in our own 1790 Patent Act it was only 14 years, as it was in the English statute of monopolies of 1624. In those times it

took perhaps a century or more to double knowledge. There should be some sensible relation between the time it takes to produce new knowledge and the length of the patent monopoly. In the case where the Government owns title to an invention, I would make it available without cost. It would be a terrific bookkeeping problem—with the size of today's Government research investments to charge a royalty for a license to use patents resulting from such Government research and development work. Besides it doesn't make sense considering the basic purpose of patents. It seems to me only fair that the public which paid for the research should get the fruits at no cost.

Senator LONG. And lower prices is one of the benefits of competition.

Admiral RICKOVER. Yes, because there is no use setting up a large new bureaucracy to police the costs. I don't think it is worth it. But, as you know, such a system is used in England. When research and development is done for the British Government, the Government gets the patent. The Government then charges their own companies for use of it. In some cases, as I understand it—the case of the Rolls Royce engine is an instance—they have recovered more than the cost to the Government of the original research and development.

Senator LONG. May I ask about this? Professor Melman of Columbia University did a study for this very subcommittee some years ago. He was on one of the research teams, including the one that went to Russia to see how they were doing.

Admiral RICKOVER. Yes, I know about him, sir. I believe he was studying machine tools.

Senator LONG. He gave us this illustration: He said he had had some contact with a large research organization in this country which spent a large amount of money to put in an information cataloging system so that on stuff that appeared in publications, stuff that was done by others, when this knowledge came to them they could catalog it immediately and get it available to their scientists in each field that these fellows were working on so as to hasten their progress.

He said that with this large expenditure they managed to shorten their time, the time on acquiring this information, by 2 weeks. But he said in this same organization they decided to make a study on how long it took the average information that they were developing to get out, and he said the average period was 4 years, and a lot of it never did get out.

Now if that situation obtains in the Department of Defense with three services trying to work on missiles, I don't see how we are going to——

Admiral RICKOVER. Senator Long, you will remember that when I began my testimony I said the ramifications of what we are discussing here go deeper than patents. It affects our national posture and national defense more than most people realize. It gets back to this: the Russians, in addition to expediting the issuance of certificates of authorship have also instituted a system of taking positive steps to push new ideas into their industry. They have recently reorganized their research and development efforts with the idea of getting new technology and automation introduced into their industry as fast as possible. It stems from the highest levels; the Presidium and Central Committee of the Party, the Council of Ministers, and Khrushchev himself——

I think there has been testimony in a subcommittee in which Senator Humphrey is involved that brings up this point.

We are woefully negligent in getting information out fast. I am sure everyone here is familiar with the fact that we were caught napping when sputnik I made its spectacular appearance because we did not have the kind of central information clearing system the Russians operate. The timetable for sputnik had been given well ahead of time in several Russian publications available in this country, just as their current timetable for landing on the moon can be found in Russian technical literature.

Mr. Clesner of this subcommittee staff made a speech recently to an industry patent group in which he gave several examples showing the unfortunate consequences caused by inadequate facilities and procedures for disseminating information. On the moonshot timetable he cited the Wall Street Journal of May 8, 1961, which reported Mr. Webb, NASA Administrator, as saying that we had no way of knowing what the Russian moon conquest timetable is. Yet this timetable has been reported in Soviet literature and so far that published schedule has come true.

The House Science and Space Committee used figures given out by NASA purporting to show that we are getting ahead of the Russians in space because we had published 64 technical papers and the Russians had only published 8. Subsequently this too was looked into by Mr. Clesner and an associate, and they could find more than 100 Russian papers. Another case concerned publication in 1950 in a Russian journal of a report on successful application of Boolian algebra, a form of symbolic logic, to the design of relay contact circuits in computers used in modern machines and weapons. From 1950–55 scientists of various American computer manufacturers tried to do the same work over again, wasting 5 fruitless years and much research money before it was discovered that the Russians had solved the problem and published their work.

These are all cases where the information was available in this country but nobody had picked it up; it wasn't actively disseminated. By not using this information fast enough we have been and are still hurting ourselves.

Senator SALTONSTALL. Admiral, have you ever looked at the space law that was drafted 4 or 5 years ago?

Admiral RICKOVER. I did at the time, sir.

Senator SALTONSTALL. I was on the Space Committee at that time and I was one of those who worked on it. It seemed to me we tried to work out the question of the rights of the individual who was working on a Government contract what belonged to the Government and under what conditions he could have application, and it seemed to me we worked out a pretty good——

Admiral RICKOVER. I think you did, sir.

Senator SALTONSTALL. It was a very contentious point.

Admiral RICKOVER. Yes, sir.

The Space Administrator, as you know, has the authority to decide whether a company has a sufficient equity to be given exclusive commercial patent rights. But what was proposed last year was that the company have such equity in all instances, unless there was a special circumstance where the Government had a need and took title. Thus there would be a giveaway with no written record. The record would

only justify those special circumstances where the Government should receive greater rights than a licensee to use the invention. The burden of justification would have been shifted to the Government rather than to the contractor. That is the point at issue.

The change proposed by the patent lawyers would make a general rule out of the present authorization to give away patents under special circumstances; it would also let NASA give away patents without keeping records and justifying their action.

I think this is indefensible.

Senator SALTONSTALL. There we lean over backward to give the Government first rights.

Admiral RICKOVER. The NASA law protects everybody. You did a good job on that law, if I may say so.

Senator SALTONSTALL. I was just one.

Admiral RICKOVER. The law is perfectly all right, but the proposed new amendment is tantamount to saying that NASA's Administrator can give away title to inventions to contracting firms and he doesn't even have to make any written justification for his action.

Senator LONG. Admiral Rickover, just one other point that it seems to me should be considered. There are two problems that bother me. One is this: We are still providing an incentive for somebody to hold out on the other guys, I fear.

Admiral RICKOVER. We still have that built in.

Senator LONG. It is a more dubious right and it would be narrowed by the Space Act, but it is still there. The incentive to hold back and not communicate would still be there.

And then I am fearful of this other problem——

Admiral RICKOVER. Let me take up that one first. I think you could get around the problem by making it part of the law or part of any contract that there must be very rapid disclosure. We have that in the Atomic Energy Commission although it isn't always lived up to. We have some private companies doing work for the AEC—so-called private companies although practically every penny is directly or indirectly contributed by the Government—that delay getting out their reports. I think it should be made a provision of every contract that all information must be rapidly disseminated where no issue of security is involved. I would get around your point that way.

Senator LONG. Now I can definitely see certain places where the industry is entitled to a patent, and the best example is in the petroleum industry. I gave that example to the committee, where these fellows have done 98 percent of the research with their own money and aren't even interested in government contracts.

The Government says the chances are, knowing all the trade secrets that Standard Oil of New Jersey has, for example, they would get a jet fuel developed quicker than we can. They have poured $50 million into research relative to this subject that they have in their files already. So, in that case I think a good case could be made that they ought to have the patent if they develop a better jet fuel.

But, on the other hand, I am concerned about the case where a fellow—these people don't do anything more than scratch the ground a little bit and contend that they ought to be the guy to get the job. For example, if the Government is going to build something new that hasn't been built before, the Corps of Engineers is going to build a new structure, someone goes out and spends a few dollars in the field

and kicks a few things around and says he is better qualified in the field than anyone else and it should be negotiated rather than put out on bids.

What would be your proposal if you are going to take the NASA approach in keeping this fellow from saying he is entitled to take out patents?

Admiral RICKOVER. If he is a brandnew outfit who hasn't done anything, he has no right to them. If he is an experienced outfit and has knowledge in this particular field, he ought to get a percentage. That could be determined.

Senator HRUSKA. With a resulting setup that he can be recompensed for a particular project he has. Take the case of Standard Oil of New Jersey. They have 98 percent of the knowledge. They ought to get practically all the patents.

Admiral RICKOVER. Nobody is arguing that any rights be taken away. That isn't the issue. We are arguing that the taxpayer shouldn't have any of his rights taken away.

Senator HRUSKA. Suppose it is 54 and 46 percent instead of 98.

Admiral RICKOVER. You can get a rough estimate of that, sir. It is possible.

Senator HRUSKA. And divide the proceeds of the patent?

Admiral RICKOVER. Yes, sir, it is being done.

Senator LONG. Actually England uses the system, doesn't it?

Admiral RICKOVER. Yes, sir; it can be done; you can work out a system for doing it.

Senator HRUSKA. It calls for more patent lawyers to determine the percentage.

Admiral RICKOVER. No, this isn't really a patent determination. This is really more a determination by people of commonsense. You don't need a patent lawyer to solve problems of that kind. You don't need a patent lawyer for you and me to divide this pad of paper.

Senator HRUSKA. If I was in IBM and we made a $50 million investment in a machine and we said we did 46 percent, and the Government says we only did 3 percent, I have an idea that would become a legal problem.

Admiral RICKOVER. I think in general the Government leans over backward to take care of industry. Industry makes out pretty well.

Senator HRUSKA. That is not the way I know of the procedure. You give them 4 percent and it is not long before they get 40 percent, just by self-aggrandizement. That is the way it is done, as some of us have observed. Maybe it occurs differently in other fields.

Admiral RICKOVER. I can only talk from my own experience, from the knowledge I have of Government people. I don't think there is a tendency of that kind.

Senator HART. Admiral, how would you apply the equities in a case like this? This was the thing I was trying to give voice to earlier.

A Government-financed research project is going to somebody that is doing well in business machines; not as big as IBM. And they produce a good end result for the Government, but in the process, and quite by accident, by conceivably drawing on their background nonetheless unconsciously, they come up with a way to control temperatures in houses very cheaply. Now should the Government take title to that and make it royalty free?

Here is what happens as I understand it. If this firm does have this idea, unless it is given the patent protection, the exclusivity for a time, they are unable to finance the production commercially, and some company like General Electric is able to take the now publicized idea and put out the unit.

Admiral RICKOVER. Well, you might provide a sliding scale where you consider the size of the company; how far is the item off the basic thing that they are working on. You might give them credit for that. But, you know, talking from personal experience, with the loose way the Government generally runs research and development you will at times find contractors working on things they like and not always on what they are supposed to with the Government money. You have a hard time keeping them hewing to the line. The companies don't always put their best people on Government research and development either.

An approach such as that of NASA or AEC could solve the problem where the Government gets first patent rights but the administrator may waive these rights. If Congress considers it is in the public interest to protect small business in these occasional instances a waiver should be granted, and a written record made of the reason for the waiver.

Senator LONG. How about the possibility of using your money to fence in a patent?

Admiral RICKOVER. No, no.

Senator LONG. Has that ever——

Admiral RICKOVER. No, I would never permit that.

Senator LONG. You understand what I am talking about?

Admiral RICKOVER. Yes, I do understand. It should not be tolerated. It will make the little companies bitter if they can't get Government contracts because they haven't the know-how and the facilities, and on top of that can't get the use of Government-financed inventions, these also going to the big contracting firms. It is already difficult enough for the small companies to compete. It sounds like a lot of pious nonsense for the big companies that get most of the patents to tell the little ones that it is good for the little fellow to work harder. That if they work very hard and long enough they may find another way to do the thing the big company finds it easy to do because it has the rights to Government patents. If the little companies work hard and long enough in such an unfair competition they will go broke, too.

Senator LONG. Here is the kind of thing I am talking about, where there is a technical problem which has been overcome and a satisfactory answer has been found and the patent is applied for. There are inferior ways of doing the same thing. Now your competitor—take the automobile industry. If you have got a new gearshift or something, your competitor when he sees this thing, is going to find another way to do it to get around your patent.

Admiral RICKOVER. And it is generally inferior and more expensive.

Senator LONG. Usually inferior methods.

It seems to me that a fellow who has got a very, very valuable scientific breakthrough with great commercial possibilities would, if he could, spend a lot of your research and development money fencing in that patent to find every conceivable way of doing the same thing.

Admiral RICKOVER. He could.

Senator LONG. Which is a waste of money. You are spending a lot of your money——

Admiral RICKOVER. Senator Long, under normal conditions, under conditions where our country was not in mortal danger from an international conspiracy, the only harm that would be done is that one party, taking advantage of a patent he obtained from a Government contract would have an undue advantage over a competitor. But today when we don't have enough scientific and research people even in the Military Establishment it is foolhardy to have them waste their energy on anything that is not absolutely necessary. We are doing a lot of useless duplication in the United States. We simply can't afford that waste of talent from the standpoint of national safety.

Senator LONG. All we get out of financing this patent is the privilege of spending our money for making the monopoly most costly to us. That is about how it works out, isn't it?

Admiral RICKOVER. I agree with you, sir, although I fully understand this is not a simple problem. The two major points I have made are these: that generally where the Government pays for the work, the Government should own the patent; and that the trend in research and development, the trend of technology all over the world, is to make all knowledge interdependent.

Senator LONG. You nodded your head, I believe, in answer to my previous question. I understood that to mean that you were saying yes for the record?

Admiral RICKOVER. That is right.

Senator WILEY. May I ask a question outside the patent area?

Have the Russians got any atomic submarines?

Admiral RICKOVER. I would like to talk off the record, sir.

Senator MCCLELLAN. This will be off the record.

(Discussion off the record.)

Senator LONG. Could I ask about four questions here?

I think they could be answered very quickly.

What is your offhand reaction to a proposal which would permit private contractors in Government research and development to take out patents on the conversion of salt water to fresh water?

Admiral RICKOVER. As I understand it, sir, the President announced in a recent speech that whatever success we may have in developing saline conversion, we would share it with foreign countries. This, I think, is a noble and a generous attitude. But if a contract for research and development in saline conversion had been made in accordance with present Department of Defense patent regulations, the President would be stopped from carrying out his policy; the foreign and domestic commercial rights would belong to the private contracting company even though the Government had paid for the development.

Senator LONG. All these contracts would provide the Government a license to use, but this does not permit the Government to provide services to the general public?

Admiral RICKOVER. Correct, and I think that is wrong.

I would assign the saline conversion program to the Federal Aviation Authority, or to another agency that follows a different patent policy.

Senator LONG. Give it to Agriculture. They have got a law——

Admiral RICKOVER. Or give it to Interior, because they would retain title to the patent. I am sorry Senator Anderson has left because I believe he is interested in that matter.

I certainly would not let the Department of Defense get hold of the saline water conversion program or any similar project as long as they stick to their present policy. Certainly not unless it is made absolutely mandatory by the express will of Congress.

Senator LONG. Now we ran into this: Here was a fellow working on weather control. That could be very valuable, and we find that these people over there have given him, signed up with him on one of these Department of Defense blank form contracts where the contract said that he would have commercial patent rights or the right to deny the Government the use of weather control for the benefit of the general public.

Admiral RICKOVER. This is similar to the point we have been discussing. A considerable number of Government agencies are now involved in weather phenomena and in related research: the Air Force, the Navy, the Army, the AEC, the FAA, NASA, Agriculture, National Science Foundation, and, of course, the Weather Bureau. They certainly should all have ready access to all information developed by their Government, no matter what particular agency spends the money. Yet they operate under different patent rules.

There should be uniform patent rules. Congress should not permit every Government contracting officer to set up his own rules on the patent rights of the Government. That is a responsibility of Congress. I strongly urge that you consider legislating a uniform rule. The various agencies will, of course, object. They will all say that their problems are so difficult and so different that it is impossible to pass a law. They will also say that Congress, of course, doesn't understand their problems, can't understand the complexities of their particular situation. But I think it is essential that Congress prescribe a uniform patent policy for all Government contracts.

Senator MCCLELLAN. That is one of the purposes of studying these bills, to try to come up with some uniform——

Admiral RICKOVER. There are three things that are fundamental, sir. The first is death and taxes. The next is the second law of thermodynamics which states that work has to be done to prevent any system from deteriorating. Although this is a physics concept, it has an analogy in human affairs; unless we are constantly alert and work to prevent it, everything runs downhill. And the third is that every human being tends to create a monopoly for himself, if let alone.

Senator LONG. Here is another question and then I am through.

What do you think about this program of permitting private patents on these cancer cures? We are spending about $50 million this year, I think, trying to get an answer to cancer. I particularly think back to what happened with penicillin. There is something the Department of Agriculture did. We are lucky HEW didn't do it. Agriculture did that, and the cost of penicillin at wholesale has gone down since it was discovered from $20 per hundred thousand units down to 66 cents, I think.

Admiral RICKOVER. Less than that, I believe.

Senator LONG. I believe it is from $2 down to 6 cents per hundred thousand units.

Now the correct figure would be that it is now selling at about one-thousandth of the price it was selling for originally, thanks to competion.

Admiral RICKOVER. The price is per hundred thousand units.

Senator LONG. Because the Department of Agriculture had that patent.

Now, if they get our cancer cure under our present contract for the public who is paying for all of this to get the benefit of it I am fearful they might be required to pay $50 every time they go to the drugstore when the stuff should be available for 50 cents.

Admiral RICKOVER. Senator Long, I think there you have got to get back to basic principles. You remember earlier I mentioned that when England did away with monopolies in 1624, they retained letters patent for inventions, reluctantly and as an exception. A legally established monopoly, protected by law, is recognized as being contrary to their basic philosophy of freedom and free enterprise, so English law looks upon patent monopolies with not much favor. There and in many other European countries patents are not granted for such things as processes relating to agriculture or the like, or medical or surgical treatment though they may be granted to certain agricultural or surgical instruments and drugs. There are borderline cases here and the law should be reexamined and perhaps changed in the light of the massive governmental and community efforts being made today to lick the major scourges of mankind. I think we must never lose sight of the fact that the inventor asks society to help him set up a monopoly, and society has the right to refuse to do this in cases where it would hurt itself gravely, as with monopolies that are used to put so high a price on medicines on which human life depends that illness will bankrupt average families.

No one argues that drug companies haven't a right to make profits but society has always intervened if prices for necessities are driven beyond tolerable limits because someone has a monopoly on these necessities. Senator Kefauver's committee certainly brought out some scandalous facts on profits made by drug companies that are overcharging suffering humanity. When our young men are asked to give their lives to their country in time of war, it is surely not too much to ask drug companies to join with the people and with the Government in research for weapons in the war against disease, and to accept Government research contracts even when these do not grant company patent rights for inventions they make with public money. Of course, no one can force them but their behavior should be made known to the public.

Consider how it contrasts with that of scientists who create epoch-making discoveries. You mentioned the case of penicillin. Now that was discovered by Sir Alexander Fleming in the course of his investigations into influenza. It has rightly been called a "triumph of accident and shrewd observation." Because of his intelligence and training, Fleming immediate saw the tremendous potentialities of mold, merely by noticing, in passing, that mold had appeared on one of his staphylococcus culture plates and had created a bacteria-free circle

around itself. His discovery is the basis of a whole family of antibacterial drugs. And it was not patented by its inventor.

You may remember, Senator Long, that last year when I talked to your subcommittee I mentioned the case of the obstetric forceps that the Chamberlen family invented in England. They kept it secret for a hundred years. Hundreds of thousands, perhaps millions of women suffered a lot of pain in childbirth just because this one family kept their invention secret; kept it a monopoly.

Senator LONG. And death.

Admiral RICKOVER. Yes, sir.

With so many people dying from cancer, so much pain being suffered by cancer victims, so much money and effort being spent by Government and private organizations in the search for a cancer cure, I think it is unconscionable for a group of drug companies—ethical drug companies—to insist on exclusive rights as the price of their joining in this effort. I doubt Congress would tolerate it for 1 minute if someone tried to set up a monopoly in a vitally needed food. Why allow it for a vitally needed way to treat or cure cancer patients?

Senator HART. We had testimony this morning from HEW which has a rule that title shall vest in Government, that they had to make one exception, and the one exception was the instance of cancer, cancer research.

Admiral RICKOVER. Yes, we have all read in the newspapers of the facts brought out during the recent investigations of the Senate under Senator Kefauver and yourself into the drug business. The unconscionably high prices exacted by the ethical drug firms appear to be possible only because of their possession of patents on vitally needed medicines. Some things are going on in this so-called ethical field which I personally would not consider ethical.

Senator LONG. Look what this cancer thing is going to mean. It looks as if we are going to get the medicine. We are making some headway.

If you have cancer, either you must have this medicine or you are going to die. It is just that simple. And the fellow with that patent is in a position to charge you whatever price he wants.

Admiral RICKOVER. Well, without any question, I would amend the HEW patent rules so that under no circumstances when the Government pays money for research in the field of health, should there be any question that any individual or firm may control that via patent monopoly. I think that is wrong. That is my personal opinion.

Senator HART. Of course, this gets you back to the starting point. This one firm took the position "I will not undertake the research in the absence of this condition."

Admiral RICKOVER. Senator Hart, this gets us back to conflicts between private interest in maximum commercial profit and public interests that may run counter to such profit. For any man or firm or group of firms to put personal or group interest above a vital concern of the American people, of a very large part of the American people, or above an important national need—well, I had better not say what I think of such people.

Where are you going to stop? At what point do you stand up and solemnly declare that this Nation, this great country, is not being run

solely to protect private business. There are national considerations that must override their interest to get maximum profits.

But of course you have but to mention private enterprise when you talk of conflicts of interest between individuals or groups and the Nation as a whole to be accused of being against private enterprise, against our free competitive enterprise system. An analogy would be to accuse defense attorneys of being against the law of the country and the country itself when they defend a person accused of crime. That we don't do since we accept the fact that a lawyer has the duty to defend his client. It is not held against him that he opposes the public prosecutor. It doesn't immediately cast a stigma on him; nobody calls him an enemy of the law.

It seems to me we should learn to accept that one can be all for the free competitive enterprise system and still have reservations or criticisms about certain of its manifestations or certain segments of business or industry. A man should be able to state his opinions on the working of our economic system without having people throw it in his teeth that he is supposedly against free enterprise, against democracy, against the American way of life. Nothing is more certain than that the principle underlying our way of life, the principle of individual freedom, is constant. But how we realize it will have to change if the principle is to be kept inviolate in the midst of vast changes in our economic life. Cliche thinking is very common and much of it simply consists of confusing a principle with the way it is applied.

You hark back to the way a constant principle was put into effect say a hundred years ago, and you argue that unless this procedure is continued for all eternity the principle will be violated. In reality, under changed circumstances a principle remains intact only if procedures are adapted to these changed circumstances. This surely applies to patents. If we want to preserve the two principles underlying patent law: (1) to stimulate individual inventiveness and (2) to benefit the country by utilizing inventions to promote technological progress, then we will have to make some changes in procedures that have evolved in the patent business.

I believe just as much in individual liberty and the free competitive enterprise system as these patent lawyers whose articles I have been reading. They talk a lot about defending the Constitution, the law, the flag, and the American way of life. But a lot of that is cliche talk camouflaging their particular interest in obtaining extra business out of Government research and development contracts. Those contracts are made for purposes other than providing a new lucrative field for patent business. They have a higher national purpose and they should be handled in a way that will best serve the Nation and the people.

One of the arguments the patent bar falls back on if all else fails is to claim that inventions made under such Government contracts will not be properly utilized unless they are handed over to private companies under a patent monopoly. This seems to me even more fantastic than the double standard they are advocating—one law, that of master and servant, for employers and subcontractors of private companies; another law for the companies themselves when they are the servant and the Government, the American people, is the master, as in research and development contracts.

They argue that it takes a patent monopoly to induce a company to work an invention—mind you, not to make the invention. They argue that the company must be given a monopoly to develop the invention that has already been made with Government money. This really goes right back to the kind of economic thinking that prevailed in the Middle Ages and in the age of mercantilism and led to letters patent for all sorts of commercial and trading ventures; to monopolies granted by the sovereign in order to induce people to invest money in a new industry or business. I though this sort of thinking went out when the Western World went for free competitive enterprise. It's a line of reasoning that runs counter to every principle underlying free competitive enterprise. It makes the preposterous assumption that contracting firms must be allowed a patent monopoly to invest money in utilizing a new invention.

That's surely turning the patent law principle upside down. Patents are given to inventors because otherwise their inventions would immediately be used by lots of people and they would get nothing out of them. Now it is argued that companies must get patent monopolies for inventions paid out of public funds because nobody would use them unless his expenses were covered by a patent monopoly. How does the risk in development of a new invention differ in principle from the risks free enterprise undertakes every time something new is started? How does it differ from the risk a man takes when he opens a new grocery store or a new hardware store on a corner where none existed before? We would be going a long way towards abandoning our free competitive enterprise system if we granted legal monopolies for what are essentially normal business risks. The giveaway advocates certainly have managed to twist the original purpose of patents out of all recognition.

Senator HART. I just want to make the point, that there is at least one character out loose who does take the position that he would not furnish his skills in pursuit of a cure for cancer unless he is guaranteed a patent.

Admiral RICKOVER. Why should a committee as august as this one pay attention to such a position?

Senator HART. We were listening to the agency that surrendered to that character in this one instance.

Admiral RICKOVER. I would certainly require that agency to change its rule quickly, sir.

Senator ENGLE. Is that the only fellow who could do the research? Is that the reason he could take such a position?

Senator HART. The witness was not in the conference which produced the agreement, but presumably——

Senator ENGLE. That is a fine state of affairs when there is only one fellow in the country who can invent a cancer cure.

Senator LONG. You have a contract that allows you to waste time and money, and then, on top of that, you can have your price on it for 17 years.

Admiral RICKOVER. I believe there is one element of Government research and development you haven't touched on, and perhaps you should. I read in the paper several months ago that the Department of Defense is now starting to hand out money to various organizations, especially the large companies, just to do what they want with it, with no specific assignment.

Senator LONG. Not even with the right of a license; nothing?

Admiral RICKOVER. Right, sir.

I wish this committee would come up with some way that each on of us here could get in on this wonderful giveaway of public funds.

Let us talk about this later on and see if we can come up with something, sir.

Senator LONG. And the argument there is that they want to encourage these people to maintain their organizations.

Admiral RICKOVER. You mean the fledgling electrical industry and the fledgling steel industry and the fledgling electronics industry. All these poor infant industries.

Senator LONG. I don't believe Senator Douglas knows about that. He is sitting there.

Senator DOUGLAS. No.

Admiral RICKOVER. Did you hear that one?

There is a recent regulation set up by the Department of Defense that they can just hand out money, grants of money to anybody to do any kind of research and development they want. The Government has no rights to it.

Senator LONG. The Government doesn't even get the right to use it. It gets nothing. It just gives them the money and——

Admiral RICKOVER. I was asking the chairman how the people sitting around this table could get in on this racket.

Senator DOUGLAS. It would be regarded as a conflict of interest. I do not approve of it.

Senator MCCLELLAN. Senator Douglas, did you have any questions?

Senator DOUGLAS. No, I have no questions.

I say that I have no questions, but there is one query that comes to my mind that probably has been expressed.

Suppose a process is developed or an invention discovered under a Government branch which, if it becomes patented and known, has high security value and may get into Russian hands. Is there any way to guard against that?

Admiral RICKOVER. Yes, sir. There is authority in the Atomic Energy Commission, NASA, and the Department of Defense to have such patents made secret. Furthermore, the Government retains the right to be able to declare such a contract secret. That can be done.

Senator LONG. I was just about through, but I do want to ask you one thing.

I said this morning, and I want to ask your reaction to it, you have got these 17 electrical contractors, the biggest in the business, from General Electric on down, that went before the Federal judge and pleaded guilty or nolo contendre to this charge that they had been systematically cheating and defrauding the U.S. Government when they had been bidding for procurement over a period of 10 years.

Now what would be your reaction to a contracting officer who sat across the table in that same 10-year period with these fellows systematically overpricing these things and practically stealing our eyeballs from us, you might say, where they were bidding on that? Do you think the contracting officer would have put the signature of the United States on that?

Admiral RICKOVER. I really do not know what contracting officers of other Government agencies have in mind when they make these

contracts. I am sure they feel they act in the best interest of their respective agencies. But it may be that long and close personal association leads them unconsciously to identify agency interest with the interest of the men from industry who sit across from them and with whom they should be bargaining in a tough way. And then we have this practice of moving people to and fro between business organizations and policy positions in the executive departments of the Government.

I know you feel strongly that, as you said in the Senate on May 16, 1961 (Congressional Record, p. 7498)—

> private businessmen on loan to Government from large corporations, high-ranking military officers, who expect, after they retire, to work for some of the same corporations with whom they are now signing contracts, are holding out to continue this patent giveaway.

I have no information on this point. But I think one cannot close one's eyes to the fact that there is rapidly growing up a powerful military-industrial complex. In his farewell address to the Nation, President Eisenhower warned that "we must guard against the acquisition of unwarranted influence, whether sought or unsought," of this complex. As he said "the potential for the disastrous rise of misplaced power exists and will persist."

I personally have long felt that this business-military complex has in it the seeds of a very real danger to the Nation. It can reduce the strong sense of a conflict of interest that is needed for hard bargaining on a contract. The special interest of big business frequently seems to outweigh vital national interests. The giveaway patent policy of the Defense Department, in my opinion, is a case in point. I think we should take to heart these words in President Eisenhower's farewell address:

> We should take nothing for granted. Only an alert and knowledgeable citizenry can compel the proper meshing of the huge industrial and military machinery of defense with our peaceful methods and goals so that security and liberty may prosper together.

How to make certain that security and liberty may prosper together is really the crux of the problem of patents in Government contracts.

Whatever you in Congress decide to do about this problem, in final analysis everything depends on the people who face each other across the table when government contracts are being negotiated. I have faced highly cooperative and patriotic contractors; also others who seem to be out for profit alone; some who seem to drive hard bargains with their Government; some who did not appear to give their best services to the Government but put their less able people on Government contract work. Here I would like to digress and put in the record the case of a man who belongs to the first category. He is Mr. Robert Paxton, former president of the General Electric Co. I had experience with him when he was running the Philadelphia Switchgear Plant of the General Electric Co. during World War II. It was right after Pearl Harbor. A number of our warships were severely damaged. It was essential to return them to service in the shortest possible time. I will tell you this: he turned that plant inside out and they delivered new electrical equipment for us in record time. This enabled us to put those ships back into service much earlier than we had expected.

I just want to mention this. Of course, it has no direct bearing on the distressing recent disclosures of collusion by General Electric and Westinghouse and others in fixing prices in Government contracts. Whatever else may have happened, Mr. Paxton did do a deal to help when the going was hard and tough during the early part of the war.

But do I know whether there was collusion between agency contracting officers and the electrical firms that were unlawfully fixing prices when bidding for Government business? My answer is, I do not know, but I cannot make myself believe that any agency contracting officer ever knowingly made a contract where there was collusion on the industry side.

Senator LONG. Let me briefly get into this for a moment.

In my judgment, you are one of the few men I have known in the military service who can be counted upon to say what they honestly think, regardless of consequences to themselves personally.

Admiral RICKOVER. I have given you the best answer I could. From my experience of many years in Government, I don't know of any. I think people may have done foolish things but not criminal things. I think some officers and other officials, some may have been taken in by adulation, by social entertaining and the like that is done for commercial purposes—that sometimes goes to a man's head. But I don't—I know of no official who knowingly has either given a contract to a company or would have signed it if he thought there was collusion on their part.

Senator LONG. Let me pose this question to you, though, Admiral.

Admiral RICKOVER. Yes, sir.

Senator LONG. Standard Oil of New Jersey maintains a capacity for commercial construction. They are not interested in building office buildings or even their own plants. But they maintain this capacity so that they can tell whether their contractors are giving them the right prices. And when they ask for bids to build something on that Standard Oil plant—they call it Humble now in most of the producing plants—but when they ask for a bid, their own letter is lying out there on that table with that sealed bid of theirs alongside of their contractor's.

Now if the low bid of their contractor is out of line, if they think those companies got together the night before and agreed what they were going to bid and that one fellow was going to get the bid with the others putting in complementary bids, then Standard Oil has its own bid in there that is cheaper than the contractors', and they proceed to build that thing with their own contract labor.

They know within one-quarter of 1 percent what they ought to pay for anything that is constructed on that property, and they have bids against their own contractors. Not that they want to build; they don't.

And the same thing goes for the Corps of Engineers of the Army. They put a sealed bid on the table against their own contractor, and when those bids are opened, if this Army Engineering bid is 10 percent below the low bid on that table, then the Army Engineers build that. They take their own boys and go out and build it. And many of those contractors are outraged when this happens, feeling that some incompetent officer has given them a poor deal. And sometimes they

will hire a man, they will take one of their best people and have him police the job and make sure that there is no padding on the Government job to see that the Government did the right thing.

That is a wise and prudent thing to do, and most commercial firms do that type of thing, recognizing how those methods, methods of that sort, can prevent you from being skinned.

How can we justify an officer, over a period of 10 years, sitting there while these collusive bids were coming in with out suspecting or reporting or doing something to protect the Government's interest?

Admiral RICKOVER. If he gets different bids, how can the official judge these figures are dishonest?

I was witness in a Federal case in 1939 I believe, when the bids on electrical cable for the Navy were identical. Supreme Court Justice Clark was then working for the Department of Justice. He prosecuted the case and he was able to prove they all used the same price.

But how is the Government official going to know there is collusion when he gets prices that are just a little different from each other? Of course, if the price is way out of line he can suspect. But I don't see how he can tell.

Senator LONG. My impression is that antitrust made that case and made it stick just with a little peanut appropriation in their general antitrust activities.

Now, if they would come across that and get the evidence to nail it, make these fellows go to jail, it would be difficult for me to see how a responsible and competent contracting officer could sit there and get taken; not just on one contract but systematically for 10 years.

Admiral RICKOVER. You understand my work is about 95 percent technical. I get into the contracts only at the end, to the extent of approving them after people come to me and say "We have got such and such proposals for such and such items, and we recommend you award it to so and so."

Usually, after we get these proposals. I discuss them with the officials of the companies, and frequently I have been able to get the prices down. If I think the prices are still too high, I send a team of Government people into the factories to check up on their costs, their profits. I do that at times, but it is very difficult, very time consuming.

I don't see how you can expect the ordinary person in a Government agency to expect that there is collusion. If you start in running the country on that basis, on the basis of distrust, the whole thing falls down. You can't do that.

Senator MCCLELLAN. Senator Metcalf, any questions?

Senator METCALF. No.

Senator MCCLELLAN. Senator Hruska, anything further?

Senator HRUSKA. No, thank you.

Senator MCCLELLAN. Mr. Wright, would you care to ask a question?

Mr. WRIGHT. Just two or three.

Admiral, I noticed you referred to the practice of NASA now in waiving title to inventions in certain cases after they see what the invention is, and I wondered when you said it was possible to determine the amount, the relative amount of contribution that the contractor makes and of the Government in response to questions from Senators Hart and Hruska, I believe, do you think that can ever be done before you see what the invention is itself?

Admiral RICKOVER. No, sir.

Mr. WRIGHT. Could you ever do that at the stage where you are letting the contract?

Admiral RICKOVER. No, sir. I think you might have to let the thing ride and have a provision for the recovery by the Government.

Mr. WRIGHT. And I gather as far as waiver is concerned you have no objection to these waiver provisions providing that a public record is made or governmental record is made which shows why the title was waived. Am I correct about that?

Admiral RICKOVER. Yes, sir. I would put the onus on the administrator and not the other way around.

Mr. WRIGHT. I see.

Admiral RICKOVER. But the Space Administrator has that right now, and the AEC has it right now, too.

Mr. WRIGHT. I understand.

Admiral RICKOVER. The law is not completely restrictive. Is says you can make a determination. But under no circumstances would I let any Government agency give Government property away without a written record.

Mr. WRIGHT. You would be satisfied if there were a presumption created that the Government was entitled to title which could be waived upon a proper showing on behalf of the contractor?

Admiral RICKOVER. You have that now, sir.

Mr. WRIGHT. Yes; I understand.

Admiral RICKOVER. That is why I don't understand what is the issue.

Mr. WRIGHT. We have that only in the AEC and Space.

Admiral RICKOVER. I know, but the push to amend the space agency bill is the issue there. The Administrator already has the right, but he has to certify it. Now there is the proposal that this be changed so he won't have to certify. I think the law should perhaps be clarified to require the Administrator to make a through study and that he justify in detail and in writing why he has decided to give away a patent. The onus should be on him to justify the waiver of title by the Government.

Mr. WRIGHT. One other thing I want to ask you about. You say you find it very difficult to make a distinction between various fields in which inventive activity occurs. It is a fact, is it not, that under the present AEC practice they treat what they regard as so-called outfield inventions differently from what they term infield inventions; that is, inventions of some classes they will make a contract under which the contractor can have title. If they are not in the immediate atomic energy field. Is that right?

Admiral RICKOVER. Yes, sir. I think that is generally the case. Suppose a man has developed a type of instrument with his own money and the AEC wants to buy a slightly different type from him. I think they will make a contract where he essentially retains his equity. There are many patents in the AEC field which belong to private contractors.

Mr. WRIGHT. And you believe that practice that the Commission now pursues is, you think, adequate to take care of these?

Admiral RICKOVER. Yes, sir; I think it is.

Mr. WRIGHT. These special interests of the contractor?

Admiral RICKOVER. I consider the Atomic Energy Act is a pretty good one. It certainly has stood the test of time. I believe there have only been a very small number of cases during the entire period the

law has been in effect where anyone has complained, and these were minor complaints that were readily remedied.

If you can have any law where you only get such a small number of complaints in 14 or 15 years, I think even the Senators here who are lawyers will admit it is a pretty good law. It is a law that works no hardship on anyone. It protects the equities of the Government and of the contractor.

Senator HRUSKA. Mr. Chairman, I would like to ask Admiral Rickover, you have been discussing situations where you feel the Government as a result of its expenditure of money in a given field and on a given project would be entitled to have the patent. Once that happens, what will the Government do with the patent according to your thinking? What will it do with it?

Admiral RICKOVER. The Government could do several things. For example, the Federal Aviation Authority has decided to charge royalties. There have been cases where Government-owned patents have been used by industry without permission being asked, and the Government has done nothing about it. I think the Government should not charge royalties.

I maintain that once the Government gets title to an invention it should dedicate it to the public. I think the bookkeeping, the bureaucracy that would otherwise be involved would be fantastic and expensive.

Make sure of quick publication; disseminate the information rapidly; let anyone use it who wants to. That is what I suggest, sir.

I don't know whether I have made clear my strong feeling that one of the most important things we must do today—and it transcends in importance the particular intracacies of our patent system—is that we must make information available quickly. That is the most important thing.

Senator HRUSKA. Then we get into the field suggested by Senator Hart, don't we, because if it is an article in common use or an article that is widely used, let us say, or used in volume, the company that has the ability to fabricate them quickly and advertise them quickly and exploit them quickly, they are the big companies. The small company would not be able to do that, the small business.

However you define it—and I agree with you there is difficulty in defining small business—would we then run into considerations of getting into monopoly because those things would tend to gravitate into the hands of big business, the big producers?

Admiral RICKOVER. You could do this: you might try to get some definition of a small business. Give them some tax relief.

There are various things you could do, but today getting scientific information out is absolutely essential for the safety of our country. That is the point I want to make here. It is essential to our survival.

In talking here this afternoon I hope all of the members have understood I am not primarily interested in the money aspect of the patent problem, that a company or individual makes a lot of money out of Government contracts or patents. That, to me, is relatively unimportant as compared with the grave danger we are in and the extreme importance for our national safety of getting information out quickly. I would hope that as a result of these hearings, you might provide for setting up an information system that would be at least as good as

the Russian system. At present the Russians have the best system for dissemination of information.

Senator HRUSKA. Of course, we are engaged in general legislation. After all, if we are going to consider bills along the line of either S. 1176 or S. 1084, it will be general legislation. It will not be legislation which will pertain to articles or equipment or commodities that will bear on this immediate defense project.

Admiral RICKOVER. I understand that, sir. But, of course, I am talking here as a public servant whose job it is to think about this and who has it evermost on his mind. To me, this is more important than anything else.

Senator HRUSKA. I'm sure you do, but, you see, if we are going to consider legislation like that that is before us, I don't know of any field of activity which will not be embraced in it.

Adimarl RICKOVER. That is right, sir.

Senator HRUSKA. Because there is scarcely an activity that any of us know of that doesn't have some Government money in it. For example, tools or the tooling process.

Admiral RICKOVER. Yes, sir.

Senator HRUSKA. Measuring devices, drugs, and medicine. And, in the case of public works, dam locks or gates; chemicals of all kinds; farm implements; textile looms, fork lifts, fuel, tractors or guns, even as simple a thing as a shotgun or a revolver or a machinegun. The boom for a weed spreader or liquid fertilizer distributor. There isn't any of those activities, nor any other activity that you can think of today that doesn't have in some form quite directly Government funds in it.

Admiral RICKOVER. Perhaps our difficulties stem from tying in the patent situation with antitrust laws. It may be that. I think we have really got a huge overall problem or rather two problems, and there is a confluence of these two problems, and that is why you can't come to a simple answer.

But I would say this from what I know of industry, and I have dealt with industry for many years and I am also familiar with scientific and engineering techniques. I say that I consider the value of patents to be overrated, and that the overrating tends to confuse and hinder us.

I understand that the particular aspect we are talking about today is whether the Government should own the patents it pays for. But that is only part of the problem. I believe it would clarify the problem if the entire issue of patents were to be reexamined. A reevaluation, bearing in mind basic principles, might demonstrate that the patent issue is obfuscating other more important issue.

You see, it may be if we did away with the patent issue our problems would be simpler. There is an analogy with the Department of Defense. When we had the Army and Navy, we had two difficult problems. When we got the Air Force the difficulty multiplied geometrically. It would be a good idea, I believe, to separate the several parts of our problem and get one after another out of the way. I want to stress once more that in my opinion the patent system is overrated, today. It was a good system when it was set up initially. It served its purpose, but like everything else, it needs to be adapted to changing economic and political conditions.

In any institution there must be change. It must be reexamined. If it has been going on for a long time new values appear and have to be considered. Certain things that once were held to be eternal truths no longer are so.

At one time a lot of people believed in slavery. Its virtues were argued persuasively, indeed with even greater oratorical fervor than the giveaway patent case is presently being argued. But today no one believes in slavery any longer. In time perhaps no one will believe in giving away public property on the say-so of a government agency and without express authorization by Congress. There are many things we thought were true at one time that today we no longer think are true. The patent system is not sacred. I think it should be reexamined. Since the original purpose of patent monopolies was to stimulate individual inventiveness and our modern industrial setup renders patents very nearly ineffective for this purpose, it might be advisable to consider establishing a different system of awards for employed inventors. Germany has a mandatory system of rewards for inventors employed in industry and in government. As it now stands, the patent system in our country does not produce the maximum possible stimulus for inventive effort. We can't afford to let this go on. Rapid technological progress has become a condition of survival.

Senator HRUSKA. Then we would have to weigh the hindrances that might develop as a result of abolishing or radically amending our patent laws.

Admiral RICKOVER. No good thing ever comes into the world that doesn't bring with it other things that are not good. That is what you have to pay for progress. Nothing is unalloyed.

Senator HRUSKA. I am speaking of that process of reasoning or logic. We say there are a lot of detriments to the present patent system. So we are going to change that patent system. And then we get new evils and new hindrances. And you have to balance them, don't you?

Admiral RICKOVER. Well, I hope you don't believe that life is orderly, that you can ever get life to be orderly and logical. As a politician you know that it is not true, sir.

Senator HRUSKA. We strive for it. We have to strive for it.

Admiral RICKOVER. Yes, and I hope you find the Holy Grail. Other people have not.

Senator HRUSKA. In that balancing process to which I refer I am not looking for the Holy Grail. I am looking for a system that has the least disadvantage to our progress as a civilization.

Admiral RICKOVER. Today the immediate problem that faces us is national survival. When we lived in an era when this horrible problem of survival wasn't facing us with such immediacy, we could do many things that in today's situation have become unwise, even dangerous.

Any system works, in a fashion. But today I think you have to look at everything from the standpoint of national survival. This may induce you to make some changes which are good from this standpoint but which may have some deleterious effects elsewhere. That just can't be helped, sir.

Senator HRUSKA. I think a guidance system on a submarine that will take the submarine under the North Pole bears on national survival, but when a forklift in a warehouse is improved in some way, and the company who improves it happens to have a patent on the forklift at the same time, it is difficult as a practical matter to see the the casual relationship. The forklift has nothing to do with national survival, and it is the necessity of general legislation to deal with the guidance system for a submarine and also with the forklift improvement, you see. Both have to be all under general legislation, and how are you going to separate the two?

Admiral RICKOVER. All you can do is lay down general statutory principles with guidelines and purposes. The Congress does this and gets around the difficulties you mentioned by providing a certain amount of discretion to the administrator to adjudicate and decide the problems that arise. In this manner there can be fairness to the Government and to the contractor.

You remember I strongly urged that when a man has equity in something like the forklift, that equity should not be taken away from him; not at all.

Senator HRUSKA. Yes, you have been very fair on that, and I think that would be very equitable, but as a lawyer I am hindered a little bit by the necessities of proofs, and those things involved in the process of adjudication.

Admiral RICKOVER. Yes, but lawyers are not the only people who have something to say about how this country is run. Why don't you try to get help from other people?

Senator HRUSKA. We try our best. We call witnesses in like yourself. We ask for inspiration from you, and I think we have got a lot of it today.

Admiral RICKOVER. I didn't give you much inspiration. My knowledge is limited. I am a naval officer with technical knowledge, and my views are limited. I am not a lawyer.

Senator HRUSKA. If your views are limited I think our prayers should be for more limitations on knowledge.

Thank you very much.

Admiral RICKOVER. Thank you, sir.

Senator MCCLELLAN. Gentlemen, any questions?

Admiral, would you care to make a closing statement or any further comments?

Admiral RICKOVER. The only thing I can say is that I am deeply grateful for having been given the opportunity to talk with this distinguished group. I appreciate the courteous way I have been treated.

I have tried to give the best advice I could. I don't know whether it will be helpful, but at least you have one another viewpoint.

I have no ax to grind. I am not a patent lawyer.

I do not believe the public, the taxpayers' part in this matter from all that I have read, has been adequately presented. I respectfully suggest you tell the patent lawyers to stop making that same old speech and get another one. Again, sir, may I thank you for your courtesy. If there is anything else I can do, if you require additional information, I shall be only too glad to help.

Senator MCCLELLAN. Thank you, Admiral. We appreciate your coming. And from the standpoint of the Chair, at least, this was a

new problem, and it has become rather complicated and we try to go through it and study it, and my first impression was that you ought not to have one agency of government over here doing one thing and another agency over here with the same contract or making a different contract for the same government. There ought to be some uniformity.

I don't know just where the real equities are, but we have gone into this to try to study it.

Admiral RICKOVER. I certainly would have uniformity. The TVA, of course, says their problem is unique. The DOD says their problem is unique. When you finally get down to it you will find you have 183 million unique problems if you hear enough people.

Senator MCCLELLAN. That is true. We have to do this in almost all legislation. You have to make some provision, have to leave some discretion in administration, and you have to do this.

Admiral RICKOVER. To answer your question, if you stated what the policy was to be and left the administrator to be guided by that, I think the problem could be worked out.

Senator MCCLELLAN. Thank you, Admiral.

The committee will stand adjourned.

(Whereupon, at 4:20 p.m., the committee adjourned.)

INDEX TO PARTICIPATION BY SENATORS AND CHIEF COUNSEL

SUBJECT MATTER INDEX

Appendix II

[FACT SHEET LETTERS]

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE,
INSTALLATIONS AND LOGISTICS,
Washington, D.C., August 22, 1968.

Memorandum for the Assistant Secretary of the Navy (I. & L.).
Subject: Request for facts related to Admiral Rickover's testimony on the Defense appropriations for 1969.

Request that we be provided with individual fact sheets on each specific fact covered in the testimony of Admiral Hyman G. Rickover before the Committee on Appropriations, House of Representatives, concerning the Department of Defense Appropriations for 1969. The specific reference is Part VI, pages 186 through 209. This request confirms telephone conversations between Colonel Loudermilk of this office and Mr. Greer of Admiral Rickover's office.

J. M. MALLOY,
Deputy Assistant Secretary of Defense (Procurement).

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE,
INSTALLATIONS AND LOGISTICS,
Washington, D.C., September 17, 1968.

Memorandum for the Assistant Secretary of the Navy (I. & L.).
Subject: Request for facts related to Admiral Rickover's testimony on the Defense appropriations for 1969.

Supplementing my 22 August 1968 memo to you, subject as above, I am attaching a more specific listing of the portions of the testimony before the House Appropriations Committee on which we need factual information. We do not wish to restrict your submission in any way by this listing, but we are not desirous of receiving voluminous material. We are merely looking for the specific circumstances together with the rationale used to support the statements made to the Congress. This information will be very helpful to us for purposes of our own analysis and in order that representatives of this office may be in a position to respond to Congressional inquiries.

J. M. MALLOY,
Deputy Assistant Secretary of Defense (Procurement).

†Attachment to Mr. Malloy's letter dated Sept. 17, 1968]

FACT SHEETS ARE REQUESTED ON EACH OF THE FOLLOWING TOPICS IN ADMIRAL RICKOVER'S TESTIMONY ON DEPARTMENT OF DEFENSE APPROPRIATIONS FOR 1969

Page 191—Request identification of and fact sheet concerning each contractor—A, B, C, D, and E.
Page 193—Request fact sheet on Company "X" to include pertinent details of the negotiation.

Page 194—Request fact sheet on tax court cases.
Page 195—Request fact sheet on matter of $4 million in excess profits.
Page 197—Request fact sheet on referenced pending contract.
Page 198—Request fact sheet on procurement of propulsion turbines.
Page 198—Request fact sheet on manufacturers of large computers.
Page 201—Request fact sheet on proposal to award large contract without negotiating price.
Page 203—Request fact sheet on general and administrative expense cases.

DEPARTMENT OF THE NAVY,
NAVAL SHIP SYSTEMS COMMAND,
Washington, D.C., October 19, 1968.

Memorandum for the Assistant Secretary of the Navy (Installations and Logistics).

Subj: Deputy Assistant Secretary of Defense (Procurement) request for documentation of facts in VADM H. G. Rickover's testimony before the House Appropriations Committee concerning Government contracting.

Ref: (*a*) DEPASTSECDEF (Procurement memo dtd 22 Aug 1968 to ASTSECNAV (I&L); (*b*) DEPASTSECDEF (Procurement) memo dtd 17 Sep 1968 to ASTSECNAV (I&L); (*c*) ASTSECNAV (I&L) memo dtd 20 Sep 1968 VADM H. G. Rickover.

Encl: Fact Sheets—9 examples.

1. In reference (a), the Deputy Assistant Secretary of Defense requested individual fact sheets on each specific fact covered in my May 1, 1968 testimony before the House Appropriations Committee concerning Government contracting (pages 186 through 209, Part 6, House Appropriations Committee Hearings on Department of Defense Appropriations for FY 1969). Reference (b), forwarded by reference (c), supplemented reference (a) and provided a specific list of nine examples cited in my testimony for which fact sheets were desired. Reference (b) stated that the Deputy Assistant Secretary of Defense for Procurement desired information on the specific circumstances of these nine examples together with the rationale used to support statements made to Congress for the purpose of his own analysis and to respond to Congressional inquiries.

2. My testimony before the House Appropriations Committee, which I presented in my capacity as Deputy Commander of the Naval Ship Systems Command and the Director of the Division of Naval Reactors of the U.S. Atomic Energy Commission (AEC), was primarily concerned with the progress of the Naval Nuclear Propulsion Program. However, each year since 1963, in testimony before the House Appropriations Committee, I have been asked to give my views on how Government contracting might be improved based on my experience with procurement in conjunction with the Naval Nuclear Propulsion Program. Each year I have pointed out specific deficiencies in defense procurement and have made specific recommendations for improving the Defense Department's procurement practices.

3. The Department of Defense has publicly disagreed with my testimony. Specifically, in 1963 I mentioned that, based on my experience, I thought profits of large defense contractors were unduly high. In response, the Department of Defense issued a press release

stating that I was "sailing on the wrong tack" and indicating that I did not know what I was talking about. The Department of Defense press release stated that defense contractors were not making high profits, that profits on defense contracts had declined since 1956 and were expected to show a continuing downward trend.

4. In subsequent years, I testified that despite Department of Defense statements indicating low profits, I was continuing to encounter requests for high profits from defense contractors and that negotiated profits on defense contracts were increasing substantially under the Department of Defense weighted guidelines method of profit analysis. I also pointed out that without uniform standards of accounting it was usually impossible to tell just how much profit a contractor actually makes in producing complex defense equipment without spending months reconstructing the contractor's books. I recommended the establishment of uniform standards of account for defense contracts so the Government would know how much defense equipment cost and how much profit a supplier made in producing it.

5. On June 17, 1968, six weeks after my appearance before the House Appropriations Committee, the Department of Defense issued a public statement announcing that they found no basis for concluding that defense profits were too high; in fact, the Department of Defense expressed concern about "a downward trend" in defense profits. On the same day, the Department of Defense, in a letter made public by the Senate Banking and Currency Committee, opposed a proposed study to establish uniform standards of accounting for defense contracts.

6. I have found the Department of Defense reluctant to change its procurement practices to correct even the most obvious defficiencies. Specifically, in 1964 I found that the Navy was paying substantially more for contractor home office general and administrative (G&A) expenses for work at the two AEC-owned, contractor-operated laboratories than the AEC would pay for the equivalent work. I recommended to Navy officials that they reduce the amounts paid for G&A expenses on Navy work at these laboratories to be consistent with amounts the AEC would pay. I was told the Navy paid more for G&A expense because the Department of Defense regulations permitted them to pay more. As a result, the Navy continued to pay the higher amonts. In each of the next four years, I pointed out in testimony that the Department of Defense regulations in this regard were resulting in unnecessary expenditure of about $400,000 each year, just at activities under my cognizance. Until this year, the Department of Defense continued to insist that its regulations were right—even though these regulations resulted in subtantially higher costs for Department of Defense work than for equivalent AEC work. Their reluctance and delay resulted in unnecessary Government expenditures of about $1.6 million at my activities alone.

7. I have prepared the "fact sheets" as requested. They are attached as enclosure (1). However, I do not understand why the Department of Defense first makes public statements that my testimony is incorrect and then, later on, requests the facts. Since the DOD has already established and publicized their position, I question the purpose "fact sheets" concerning my testimony can now serve. In this regard, you should be aware that the fundamental issues involved have been pointed out by me in testimony as far back as 1963.

8. I used examples in my testimony in order to illustrate specific fundamental deficiencies in defense procurement. I did not wish to single out particular firms or individuals for criticism. Therefore, names of individuals or contractors generally were omitted. I have also omitted them from the "fact sheets" since such information is not germane to the issue. I believe there are numerous similar examples in the Department of Defense that would just as well illustrate the main points of my testimony.

H. G. RICKOVER,
Deputy Commander for Nuclear Propulsion.

Enclosure (1)

FACT SHEETS—9 EXAMPLES

[*Ed. note: Page No. this vol.*]

Enclosure (1) to SHIPS 08H–360

FACT SHEET

DOD Request:

PAGE 191—Request identification of and fact sheet concerning each contractor A, B, C, D, & E.

Admiral Rickover's testimony:

"It is my experience that the data reported by contractors are generally different than the actual data found on Government audit. Here is a comparison of actual and reported profits on five recently completed contracts:

"Contractor	Profit reported (percent)	Actual profit by Government audit
A	4.5	10.0
B	12.5	19.5
C	11.1	16.9
D	[1] 2.0	15.0
E	21.6	32.7"

[1] Loss.

Additional Facts:

The contracts involved in this specific example are for main coolant pumps, nuclear valves, reactor plant instrumentation and control equipment (2 cases) and heat exchangers respectively.

Significant differences between supplier reported profits and actual profits determined by Government audit are common occurrences that can be observed in most fixed price redeterminable or fixed price incentive contracts. Numerous other examples could have been used.

Under fixed price redeterminable or fixed price incentive type contracts, contractors must submit certified statements of actual costs in order to establish final prices. Government auditors often determine that certain of the contractors' certified costs are not properly chargeable to the contract under "generally accepted accounting principles,"or under the cost principles set forth in Section XV of the Armed Services Procurement Regulation. However, the cost principles in ASPR Section XV are only a "guide" for fixed price contracts; contractors often disagree with the audit determination of costs. ASPR paragraph 15.602b(i) provides:

> *Retrospective Pricing and Settlements.* In negotiating firm fixed prices or settlements for work which has been completed at the time of negotiation (e.g., final negotiations under fixed-price incentive contracts, redetermination of price after completion of the work, or negotiation of a settlement agreement under a contract terminated for the convenience of the Government), the treatment of costs is a major factor in arriving at the amount of the price or settlement. However, even in these situations, the finally agreed price or settlement may represent something other than the sum total of acceptable cost plus profit, since the final price accepted by each party does not necessarily reflect agreement on the evaluation of each element of cost, but rather a final resolution of all issues in the negotiation process.

As a result, final settlement prices may result in one profit percentage based on the costs determined by the Government auditor, a different profit percentage based on contractor-alleged costs and perhaps a third profit percentage reflecting a compromise position somewhere between these two.

The main point is, under today's rules it is practically impossible to tell just how much it costs to manufacture equipment, or just how much profit a supplier actually makes without spending months reconstructing the supplier's books. Costs and profits reported by contractors are often significantly different than costs and profits determined by Government audit. Consequently, unaudited profit and cost information volunteered by contractors should be given little credence.

FACT SHEET

DOD Request:

PAGE 193—Request fact sheet on company "X" to include pertinent details of negotiations.

Admiral Rickover's testimony:

"Subcontractor profits are treated as a cost on Government contracts, usually a material cost. Under Department of Defense rules a company can purchase materials from itself, pay itself a profit on

these materials, but treat this profit as cost on the Government contracts involved. I will give you an example.

"Several years ago we were negotiating with a large, multidivisional firm—I will call it company X—who was the low bidder in a procurement for a noncommercial item involving limited competition. The division of company X with whom we were dealing quoted us a price for the item and identified that the price contained a profit of about 15 percent. That was his base profit. Parts of the item were to be made in several other divisions of this company. Each of these divisions submitted its costs, plus its profit, to the lead or selling division and the price of these parts, including profit, was then included as a material cost in the breakdown submitted to us by the division of company X with whom we were dealing. We found that there had been no real attempt to get prices from outside sources for these parts and no real check made of the estimates of the various other divisions; the prices from the other divisions were taken at face value. The selling division simply added his own 15 percent profit to the prices—including profit—requested by the other divisions, resulting in profit on profits to the same company.

"In this case the company obviously expected to make a profit much greater than the 15 percent shown in his bid. But the additional profit was hidden in the bid as a cost of materials.

"What I am telling you is that while contractors may be able to show low profits on Government contracts, actual profits may be substantially higher. Take the example of company X. The division with which we were dealing will show a profit of 15 percent on the item we bought. But the various other divisions also will show a profit on the parts they supplied. Cumulatively, for all the divisions involved, as much as 20 to 25 percent of the price to the Government may be for profit. But the company will only show a 15 percent profit on the item.

"Thus, of the $35 billion in negotiated defense contracts each year, as much as $7 or $8 billion may go for profit on defense work, not just the $4 billion paid to the Government's prime contractors.

"That is why the Government rules for determining profits are so important and why these rules must permit only a proper rate of profit."

Additional Facts:

This procurement involved propulsion plant equipment for a new design submarine. There was substantial difference between the Government's estimate (about $4.5 million) and the contractor's bid price (about $11 million). Negotiations lasted nearly a year. A lump sum price of $7.5 million was finally established.

A Government audit of the contractor's proposal revealed that material estimates included a substantial amount that would be profit to other divisions of the same company. The auditor's report states, in part:

> "We do not question the allocability of other material requirements for Item 1a included in the support in reasonably sufficient detail, but are not satisfied with the costs represented whether brought forward from prior procurement experience or based upon 'quotations' received. One example is the proposed acquisition of castings and forgings from (another division of the same

company) at a 'price' of $261,217, which has been found to include a profit factor of $128,467—the price for the equivalent for (the prior procurement), $364,000, resulted in an indicated profit, we understand, of $120,000. We see no reason to accept proposed sole source acquisition of 'raw material' even at source cost, eliminating profit. From past experience with intercompany 'buys' we recommend that competition be required before the profit margins were disclosed. Furthermore, we understand that the lower price offered by (the other division) for (the current procurement) excludes processing previously accomplished at that location. Correspondingly, the cost base of the new quotation is controversial and cannot be reconciled with the (contractor's) details concerning proposed farm out of this same processing work for (the current order)."

The final price was established on a lump sum basis without agreement on individual elements of cost. However, a postaward, GAO review of the contractor's books resulted in GAO recommending recovery of approximately $500,000 under the defective pricing provision of the contract because the contractor allegedly did not reveal certain cost and pricing information pertinent to these material costs during negotiations.

FACT SHEET

DOD Request:

PAGE 194—Request fact sheet on tax court cases.

Admiral Rickover's testimony:

"Profits calculated solely as a percentage of costs can be too high even when the profit percentage used appears quite small. The U.S. Tax Court, in hearings involving findings of the Renegotiation Board, reported that a certain defense contractor made profits before taxes equal to 120 percent of its invested capital at a time when 99.6 percent of its total sales were to the Government. In another case, the Tax Court reported that another firm made 612 percent and 802 percent profit on investment in successive years at a time when 99 percent of its sales were to the Federal Government. These cases are examples of what can happen when profits are calculated solely on a percentage of the costs involved.

"I believe that the contractor's investment should be a major consideration in determining what profits should be paid on defense contracts, particularly on contracts with companies whose defense work is a major portion of the facilities or resources at a particular contractor location over an extended period of time."

Additional Facts:

Please see 37 Tax Court 613 and 39 Tax Court 207 (Attachments following:).

[(605) BOEING CO. *v.* RENEGOTIATION BOARD 613]

BOEING COMPANY, PETITIONER, *v.* RENEGOTIATION BOARD, RESPONDENT

Docket No. 935–R. Filed January 10, 1962

1. Expenditures made by petitioner for certain advertising and other overhead expense *held* not allocable to the petitioner's renegotiable business in 1952.

2. Cost of work performed with respect to the design, development, and construction of a prototype airplane not in pursuance of any contract with the United States Government *held* not allocable to petitioner's renegotiable business.

3. Amount of excessive profits made by petitioner from its renegotiable business in 1952 determined.

Lowell P. Mickelwait, Esq., *Andrew M. Williams, Esq.*, and *David E. Wagoner, Esq.*, for the petitioner.

James H. Prentice, Esq., *David L. Rose, Esq.*, and *Harland F. Leathers, Esq.*, for the respondent.

WITHEY, *Judge:* On December 5, 1955, the respondent issued its unilateral order determining that for the year 1952 petitioner had received excessive profits in the amount of $9,822,340 upon renegotiable business with the United States Air Force. At the close of the proofs herein, respondent, by an amendment of its answers to conform to such proof, now claims total excessive profits for 1952 in the amount of $20 million. The disposition of two preliminary issues is necessary in order to arrive at the total amount of petitioner's renegotiable profit for 1952. These issues are (1) whether certain advertising and other overhead expense is properly allocable to petitioner's renegotiable business and (2) whether the cost of work performed with respect to the design, development, and construction of a prototype airplane not in pursuance of any contract with the United States Government was properly allocable to renegotiable business. Depending upon the disposition of those issues, the parties have stipulated the amount of petitioner's renegotiable profit for 1952.

Preliminary Issues

FINDINGS OF FACT

All of the extensive stipulations of fact herein with respect to all issues are found as stipulated.

It has been stipulated and is accordingly found that during 1952 petitioner paid or incurred for overhead expense $581,530.93 which was properly chargeable as renegotiable cost for that year. This amount included amounts paid or incurred for advertisement in trade publications for the dissemination of technical information to the airframe industry, for catalogs and technical pamphlets designed to aid users of petitioner's products, for publications to aid in its personnel relationships and "help wanted" advertisement.

In addition to the above, petitioner paid or incurred during 1952 further total overhead expense in the amount of $629,755 of which it has on its books allocated to renegotiable cost the amount of $627,704. Of the amount of $629,755 so paid or incurred, $238,758 was for what petitioner designates "institutional" advertising, $80,000 was for entertainment expense, and approximately $311,000 was for selling expense.

Petitioner's method of bookkeeping, regularly employed and in accordance with which it prepared its Federal income returns, provided for an "overhead pool" where such items of overhead expense as could not be charged to a specific contract or work in progress were accumulated. At the close of its fiscal year the expense items comprising the pool were allocated between renegotiable and nonrenegotiable business in direct proportion to the direct labor man-hours expended with respect to each.

"Institutional" advertising is typified by a newspaper advertisement of petitioner extolling the uses and virtues of an analog computer which Boeing is there claimed to have designed and developed. The advertisement is directed primarily to prospective purchasers of analog computers. Also typical of such advertising is a newspaper advertisement depicting a line of B–47 aircraft at Boeing's Wichita, Kansas, plant. The advertisement has as its primary objective the keeping of the Boeing name before the public and the instilling in the public mind of the fact that it was an efficient producer of an unusually complex aircraft. Likewise typical of such advertisement is a newspaper advertisement depicting a Boeing Stratocruiser in flight over the city of Paris, France. The primary objective of this advertisement is the keeping of the Boeing name before the public as producer of commercial aircraft.

The entertainment expense was in part related to the promotion of employee and community relationship and in part the purchase of meals and general entertainment of visitors and business associates.

Selling expenses were incurred or paid principally in connection with Boeing's commercial business.

No part of the above-mentioned $629,755 represents expenditures properly chargeable against the petitioner's renegotiable business for 1952.

In 1948 petitioner contracted to furnish the United States Air Force with B–47 jet bombers capable of altitudes and speeds at that time never before accomplished on a production basis by either bombardment or fighter aircraft. Later than 1948, but prior to 1952, it also developed a tanker aircraft designated the KC–97, which was propeller-driven, with internal combustion engines, and single low-wing design which was equipped with a refueling mechanism which also had been designed and developed by petitioner. The KC–97 had performance capability sufficient to refuel adequately in the air the most advanced bombers then used by the Air Force, the B–29 and the B–50 which was the improved B–29. When it became apparent to petitioner that the Air Force was to acquire and use the B–47 bomber as its primary deterrent weapon, it also became apparent that the KC–97 was not of sufficiently high performance to refuel adequately the B–47 in the air although it was true that by slowing the B–47's speed sufficiently, it was possible to make contact with a KC–97 and for the refueling process to take place. Refueling a B–47 at such low speeds and low altitudes posed undesirable military situations. Both aircraft while in the refueling process were traveling at such low speeds and low altitudes that they were dangerously susceptible to enemy action. Boeing knew upon the advent of the B–47 that the Air Force had contracted for its construction largely because the basic design thereof contained hitherto unknown growth possibilities. The basic design of the B–47, for instance, permitted a range of approximately 1,500 miles. Before the completion of work under contract 21407 by the use of newly developed engines, rocket assisted takeoffs, and refueling in the air, this range had been extended to about 5,000 miles. It was reasonable for petitioner to conclude in 1952 that the B–47 had even greater growth potentiality were it to be refueled by a tanker with performance characteristics more nearly comparable to its own. Petitioner knew also that the Air Force intended to make full use of the growth potentialities of the B–47.

Petitioner also believed, and it was the consensus of opinion of airframe manufacturers in this country, that jet-powered commercial airliners would be in demand within a reasonably foreseeable future. Petitioner attempted on several occasions prior to 1952 to obtain a contract from the Air Force for the construction of a jet-powered tanker. Representatives of the Air Force, although interested in such a tanker, indicated that they had no congressional appropriation therefor, no program therefor, and as a result refused so to contract. In 1952 petitioner's management was sufficiently certain of an eventual Air Force contract for such tankers and of a prospective commercial market for jet-powered transport aircraft that without a military or commercial contract therefor they proceeded to design, develop, and partially construct what was designated on its books the model 367–80 prototype. During 1952 petitioner expended $1,734,302 in this process. This work occurred in a walled-off area of the Government's plant at Renton, Washington, for which petitioner was charged and paid rental. On its books the amount so expended was charged as an expense to profit and loss during 1952. The preliminary engineering and development work began in April of that year and construction of the prototype began in the latter part of that year. About 83 percent of the amount expended in 1952 was for engineering and development work and the remaining 17 percent was for tooling and production. In producing the prototype, petitioner's management instructed its employees that where problems arose as between the commercial or military concept of the prototype, the military concept was to prevail. The airplane was constructed and first flown in 1954 and was still flying and in use by petitioner as a "test bed" as of the date of the trial hereof, in October 1958. The prototype was used to try out and test new ideas developed by petitioner and to demonstrate its commercial and military possibilities to prospective customers. It is still in use for that purpose.

The airplane was the prototype of Boeing models 707 and 720–B jet aircraft and the model KC–135 jet tanker subsequently sold in substantial numbers to the commercial airlines and the Air Force of the United States, respectively.

Boeing's construction of the prototype was without a contract with the Air Force or any commercial customer and no part of its expenses in the construction therefor was paid for by either. All such expenses were defrayed from Boeing's funds. Boeing's determination to construct the prototype in 1952 with its own funds and without contract resulted in the availability of the KC–135 tanker to the Strategic Air Command of this country 2 years prior to the time it would have been available had Boeing awaited an Air Force contract. The availability of the KC–135 constituted and effectuated a significant advance in the military utility of the B–47 and the B–52 bombers of the Strategic Air Command.

Upon three prior occasions petitioner had constructed prototype aircraft without Government or other contract therefor and had upon each occasion treated them upon its books as capital assets.

In July 1952, in response to a request by petitioner, the Deputy Commissioner of Internal Revenue, by letter, granted petitioner permission to change its accounting method with respect to prototype 367–80 so that the cost thereof might be expensed by petitioner rather

than capitalized as had been its method prior thereto. The request was made upon the grounds, as petitioner stated, of its uncertainty whether income would ever be realized from the prototype and that it had no certainty of an ultimate purchaser or of a future market or demand for the model airplane of which 367–80 was a prototype. The permission granting the right was based upon the same grounds.

The model 367–80 prototype when constructed had a useful life of 25 years and a value of not less than $4 million.

The expenditure of $1,734,302 by petitioner in 1952 with respect to the engineering, development, and construction of the model 367–80 prototype was for the creation of a capital asset. Such expenses do not constitute reimbursable costs with respect to the renegotiable sales and profits of petitioner for 1952.

OPINION

Petitioner, in claiming allocability of the advertising, entertainment, and selling expenses set forth in our findings, relies almost entirely upon the general provisions of section 103(f) of the Renegotiation Act of 1951 and the regulations of the respondent thereunder dealing generally with the allocability of costs. Both that section of the Act and section 1459.1 of respondent's regulations provide generally that where the contractor maintains a cost accounting system which properly reflects renegotiable costs, the costs there shown will be allocated in accordance with that method to renegotiable receipts. However, with respect to selling and advertising expense, the former of which would include the entertainment expense involved herein, section 1459.7 of the regulations is specific. Subsection (a)(1) thereof is as follows:

(a) *Selling.*—(1) Selling expense will be allocated to renegotiable business only to the extent that (i) it relates in major part to technical, consulting and other services performed in connection with the application and adaptation of products comprising the renegotiable business to the uses and requirements of the Government or other contractors; or (ii) it relates to the maintenance of offices or agencies engaged in the servicing of products comprising the renegotiable business; or (iii) it relates to the sale of products or services comprising the renegotiable business which are of the type ordinarily sold or rendered by the contractor and which are sold or rendered through the distribution system normally used by the contractor; or (iv) it is a commission of the type allowed in section 1459.2(c).

Subsection (b)(1) is as follows:

(b) *Advertising.*—(1) Items of advertising expense comprising "help wanted" advertising, advertising in trade publications which are primarily directed to the dissemination of technical information within the contractor's industry, catalogues and technical pamphlets designed to aid users of the contractor's products, and house organs and other publications directed to labor and personnel management and relations, are recognized as costs allocable to renegotiable business. The aggregate of such costs will be allocated in accordance with the method of accounting found by the Board to be acceptable under section 1459.1(b) of this subchapter.

Subsection (b)(2)(ii) thereof is as follows:

(b) *Advertising.*—* * *

(2) Other advertising expense is allocable to renegotiable business as follows:

* * * * * * *

(ii) In cases in which it can be demonstrated that a prime contractor or subcontractor engaged in renegotiable business to the detriment of its normal commercial business in the year under review, and thereby incurred the risk of loss of its competitive position in the industry concerned, the Board will allocate

to renegotiable business that portion of the prime contractor's or subcontractor's normal advertising expense which the Board deems properly attributable to the effort by the prime contractor or subcontractor to forestall such loss of competitive position.

We are unable to find from this record that petitioner's disputed advertising expense falls within any of the categories of such expense set forth in subsection (b) above quoted and have found as a fact that it was here paid or incurred with respect to its commercial business or to maintain its name before the public as a producer of commercial aircraft. No evidence has been introduced to establish that any of such advertising had the effect of recruiting employees, raising or maintaining the morale of its employees, or of recruiting suppliers. It is apparent that under the stipulation of the parties petitioner has received adequate allowance of such expense as renegotiable cost.

We are likewise unable to find from the record that the disputed selling expense falls within the provisions of subsection (a)(1) above quoted and have found as a fact that such expense related to petitioner's commercial business. As in the advertising issue, we note that adequate allowance has been made in the stipulation for such expense as a charge against renegotiable receipts.

On this issue we find for the respondent.

Relying on section 103(f) of the Renegotiation Act and the provisions of sections 1459.1(b)(3) and 1459.8(e)(3) of the respondent's regulations under the Act, the petitioner contends that its expenditures of $1,734,302 during 1952 with respect to the 367–80 prototype airplane constitute experimental and developmental costs incurred and paid by it during that year in the operation of its experimental and development division and as such the allocable portion thereof based upon a comparison of direct labor hours expended on renegotiable and nonrenegotiable business, or $1,731,283, is chargeable as renegotiable cost herein. The petitioner makes this contention despite the fact that the expenditures were not made in the performance of a contract with any agency of the United States Government.

Respondent contends, on the contrary, that the expenditures do not constitute experimental or developmental expenses within the meaning of either the portion of the Renegotiation Act or the provisions of the respondent's regulations thereunder relied on by petitioner but are in reality expenditures for the acquisition of a capital asset which is not chargeable renegotiable cost.

The portion of the Renegotiation Act and the provisions of the respondent's regulations relied on by petitioner in support of its position are not here applicable, and no part of the expenditures is allocable to renegotiable business if the expenditures were made for the acquisition of a capital asset.

In support of its contention petitioner likens the expenditures here involved to those which are incurred in the operation of an experimental laboratory. Inasmuch as petitioner's president in his testimony herein repeatedly stated that the prototype was a "test bed," we think the simile is proper but in a different respect. While it is clear that laboratory expenses for fuel, expendable test tubes, chemicals, salaries and wages, and general overhead are properly to be regarded as the expense of operation of an experimental laboratory, no one could properly claim that the cost of construction of the laboratory itself is overhead expense. The laboratory has a utility beyond a single year;

it has a determinable value and may be put to use in other fields of business than that of its owner. We not only liken the prototype here involved to an experimental laboratory but to one of the tools of a laboratory such as one owned by petitioner, i.e., its wind tunnel. There is no evidence here that petitioner has attempted to reduce its 1952 receipts by amounts expended for the construction of its wind tunnel. The wind tunnel like the prototype is an experimental tool or test part, with a useful life greater than 1 year and value of its own.

We are not impressed either with petitioner's contention that there was no certainty when the prototype's construction was begun in 1952 that it would ever be completed or that it would ever derive income as a result of its use or that there was a market for the model of which it was a prototype. The word "certainty" as petitioner uses it has a broad philosophical connotation and, of course, in that sense there is considerable authority for the philosophical proposition that literally nothing is certain except death and taxes. As used by this and other courts, however, in the context hereof the word means reasonably certain from a business standpoint, that is, an assurance based upon existing factors which lead in the normal course of business to an expected result. *Hart-Bartlett-Sturtevant Grain Co.*, 12 T.C. 760. In view of its loss with respect to a prior prototype, we do not believe that petitioner would have so endangered its comparatively small net worth as to enter upon the construction of a multimillion dollar prototype airplane without a reasonable business assurance that the prototype would be completed and that there would be a reasonable assured and profitable future market for the models of which it was a prototype. We are convinced that from a business standpoint petitioner took a calculated risk with respect to a future market but that such risk was no more than that which is to be expected in the ordinary conduct of any business. The prototype has all of the attributes of a capital asset, and we find that it was one and that the costs pertinent to its engineering, designing, and construction incurred and paid by petitioner during 1952 cannot therefore be properly allocated to renegotiable business.

In accordance with the stipulation of the parties we therefore find that petitioner's renegotiable profit for 1952 was $56,734,119.

Reasonableness or Excessiveness of Profit.

FINDINGS OF FACT

Petitioner is a Delaware corporation, organized in 1934, and at all times material herein had its headquarters and principal place of business in Seattle, Washington. With few exceptions its business has always been the manufacture of airframes. To and through the year 1952 about 99 percent of its production has been that of airframes for the military service of this country. Airframes consist of the fuselage, wings, landing gear, and control surfaces of an airplane. All of its Government production has been performed under contract with one or another of the military services. To a large degree such contracts have resulted from demonstrations of petitioner's products and designs in competition with those of other members of the airframe industry. Generally, the airframe industry is marked by unusually intense competition due largely to the fact that it is

comparatively new and, since the close of World War II, has experienced an extremely rapid advancement and growth in the art of the design of aircraft. Throughout its existence petitioner has never experienced normal business as that term is generally understood. When performing under Government contracts, it has consistently produced an article of high unit cost, its volume being low in comparison to manufacturers generally. Its profits have been, in one form or another, based upon its cost of production and have been correspondingly high in amount. However, the contracts have always contained a provision that they might be terminated by the Government without notice. In petitioner's experience such contracts have upon occasion been so terminated leaving petitioner's plants, equipment, and personnel suddenly idle. In fact, whether petitioner was working to capacity or completely idle has been almost entirely governed by the exigencies of international politics and the safety or danger to the United States engendered thereby. Its business has always been characterized by peaks and valleys and abnormality rather than normalcy. Compared to the total sums involved in petitioner's production under Government contracts, its investment in fixed business assets has been and was in 1952 small. Its successes in obtaining contracts with the Government have been primarily due to the experience, know-how, and skill of its employees both direct labor and general administrative, supervisory, and especially its design engineering staff. Its attempt, prior to 1952, to break into the civilian aircraft field was at financial loss but was nevertheless undertaken for the purpose of maintaining in its employ a core of experienced and skilled personnel so that the integrity of its overall know-how would remain intact. This attempt was the result of the sudden termination of large Government contracts subsequent to the close of hostilities at the close of World War II.

During and subsequent to World War II petitioner manufactured B–29 heavy bombardment aircraft under contract with the United States Air Force. During World War II, as the result of winning a design competition carried on under Air Force auspices, its design was chosen as that which was to be the medium bombardment aircraft for the use of the Strategic Air Command, and petitioner was chosen as the design prime contractor for the manufacture thereof. The bomber so chosen was designated the B–47.

The B–47 was chosen by the Air Force partly because of the great advancement it represented in the art of bomber design but largely because of the growth possibilities inherent therein. It was the first sweptwing, jet-powered bomber ever constructed. Its performance was far superior to the best performing bombardment aircraft theretofore manufactured, its service altitude being 45,000 feet as compared to the previous limit of 35,000 feet and its speed, exceeding 600 miles per hour, represented an advancement over former bomber speeds of about 300 miles per hour and altitudes of 10,000 feet. Its wing-type, although having been used by the Germans in World War II in fighter aircraft in comparatively crude form, was an innovation in the construction of bombing aircraft. The wings were sweptback, very thin for the weight of the B–47, with a high aspect ratio, and contained six jet engines in pods protruding forward and below the leading edge of the wing. Whereas the wing covering of previous bombers, al-

though metal, was not designed to carry much, if any, of the wing-loading, that of the B–47 was of metal and was designed to bear a substantial part of that weight. The wing covering tapered consistently from a thickness of five-eighths inch at the root to three-sixteenths inch at the tip. As manufactured by petitioner the plane was equipped with its landing wheels placed in tandem rather than side by side and at the nose. To aid in reducing its approach speed and its landing run, it contained a "drogue" parachute in a tail compartment which could be opened by the crew while in flight. Although the B–47, as experimentally constructed, was equipped with conventional ailerons, these were found to reverse their function at very high speed due to the bending and twisting upwards of the outer portion of each wing upon which they were located. To correct this effect, petitioner installed spoilers upon each wing which made it possible to counteract the reversing effect by interference with the smooth flow of air over the wing, thus causing that wing to lose its lift and lower. The bending and twisting effect was also counteracted by the placement of the engines as above described. The plane, due to its radical wing design, as experimentally built, was deficient in its lateral control at approach and landing speeds. As manufactured, petitioner designed and installed wing flaps at the inner portion of each wing. These could be extended from the trailing edge of the wing to increase its lift at low speed and could be used as supplements to the ailerons to increase low speed lateral control. The wings also contained the plumbing for the injection of water into its engines. To aid in its takeoff, the B–47 was equipped with rocket-type thrust in the form of multiple "Jato Bottles."

As finally manufactured in 1952, the B–47 was the densest bombardment aircraft ever produced. Density is the degree of inside space which is occupied by the equipment necessary to its operation as an airplane and as a weapon. As experimentally designed and built, when accepted by the Air Force, the gross weight of the B–47 was 120,000 pounds. In 1952 its gross weight had advanced to 220,000 pounds. Gross weight is the number of pounds of weight represented by the aircraft itself, its fuel load, its crew, bombs, and weapons which it is capable of lifting on takeoff. Gross weight has a direct bearing upon its value as a weapon in that the more fuel lifted along with its full load of bombs the greater its range of operation.

In 1952 the B–47, in accordance with contract specifications, was to have installed, together with water injection, a bomb-navigation system necessary for the successful delivery of its bomb load and a system of defensive armament control. Each of these systems was of such advanced design that the subcontractors who manufactured and designed them had not, during 1952, completely developed them. Each of them was equipment, the furnishing of which was the responsibility of the Air Force. Because of the late development and delivery to petitioner of these systems, they or one of them were not installed in some of the B–47's delivered by petitioner and accepted by the Air Force in 1952. Such B–47's were listed as "deficient."

Because there is a limit to the fuel load which an airplane can lift, its range, as before stated, is thereby limited. The Air Force in 1946 requested petitioner to design a mechanism which would permit the rapid transfer of fuel from a tanker airplane to a bomber while in

flight. Petitioner designed and constructed such a mechanism and installed it in a C–97 cargo plane which thereby, after being equipped with the necessary tank capacity, became the KC–97 tanker airplane after its acceptance by the Air Force. These planes were propeller-driven and had sufficient speed so that fuel could be transferred from them to a B–47 provided the latter reduced its speed and altitude to conform to that of the former.

A B–52 is a bombardment aircraft of the same basic configuration as the B–47 with the exception that it is considerably larger. Its gross weight is more than double that attained by the B–47. Its performance capabilities exceed those of a B–47 to about the same degree as the B–47 exceeded those of its predecessor, the B–50 propeller-driven bomber. The Air Force in 1947 contracted with the peitioner for the design and construction of two experimental models of the B–52. In 1952 it successfully designed and built two such aircraft. Because of petitioner's experience with the B–47, it was discovered that metal wing surfacing with the consistent taper used on the B–47 was not of proper design to permit the full attainment of the B–52's performance and growth capabilities. To correct this, petitioner, through its design engineering, accomplished one of the few innovations in airframe construction, which has occurred in late years. This consisted of the designing of a metal wing surface with an inconsistent taper from root to tip to a degree of tolerance theretofore unknown in airframe manufacture. When constructed, the wing appears to be slightly concave. In addition, petitioner designed for both the B–47 and B–52 a method of rolling the wing surface metal with the proper taper whereas theretofore it would have been necessary to machine it to the desired thickness tolerances.

The B–50 bomber is a propeller-driven aircraft which is an advanced B–29, which latter bomber was the bomber used by the Air Force in the Pacific theater of operations during World War II. Petitioner, under contract with the Air Force, manufactured 22 B–50 bombers during 1952. The contract called for the manufacture and delivery of 36 B–50's.

The Bomarc is an intercontinental ballistic antimissile missile. It represents the entry of the United States into the antimissile field. It consists of an airframe in which is contained a warhead, fuel-carrying capacity, and the plumbing necessary to its delivery to combustion chambers, a stable platform upon which is installed electronic equipment for ground control and for its self-guidance to a target, and gimbal-type combustion chambers for steering and stabilizing purposes. Petitioner, under Air Force contract, designed and constructed two such experimental missiles in 1952.

Upon the opening of hostilities in Korea in 1950, the Air Force had determined that the B–47 bomber represented its chief deterrent weapon with respect to threatened attack on the United States by an enemy country. It thereupon expanded its order for B–47's. It adopted a policy which required that they be manufactured not only by Boeing in Wichita, Kansas, but by Lockheed Aircraft Corporation and Douglas Aircraft Company in their factories situated elsewhere than Seattle or Wichita. To expedite the advent of the latter two companies into the manufacture of B–47's and to act as a clearing-house for the problems which would thereby arise, the Air Force, in

July of 1951, established the B–47 Joint Production Committee made up of representatives of the three manufacturers and the Air Force, with an Air Force officer as chairman. As design prime contractor of the B–47, petitioner was required by the Committee to furnish Lockheed and Douglas, competitors of petitioner, with master tooling gages which it had developed for production of the B–47, to furnish them with designs and drawings, to teach Lockheed and Douglas engineers and employees Boeing's production methods, and generally to make available to them its manufacturing know-how. Boeing actually furnished them 18½ complete sets of B–47 components and over 18,000 miscellaneous parts.

Under contract 22413, which was a cost-plus-a-fixed-fee arrangement entered into on October 31, 1949, petitioner manufactured and delivered to the Air Force in 1952, 36 B–47's. This type of contract is customarily used for the procurement of airframes ini their experimental and developmental stage. In this instance, it provided for the reimbursement to petitioner of all costs of production, together with a fixed profit of 6 percent of such costs in addition thereto. For B–47's delivered under this contract, petitioner in 1952 received cost reimbursement of $10,646,214 and a profit of $1,730,607.

Under contract 21407, which was a fixed price incentive-type contract entered into on May 10, 1952, petitioner, in 1952, manufactured and delivered to the Air Force 263 B–47's. This contract provided for the reimbursement to petitioner of all cost of production plus a fixed fee of 7½ percent of estimated costs, which estimated costs, as was the case with respect to each incentive contract here involved, were first negotiated between petitioner and the Air Force prior to the execution of the contract and were thereafter renegotiated as a "firm target" estimate of cost to apply retroactively and prospectively from delivery of the 100th bomber throughout the life of the contract. For its cooperation in the activities of the B–47 Committee and its aid in getting Lockheed and Douglas into the production of B–47's, the fixed fee was raised one-half of 1 percent so that petitioner's total fixed fee under this contract was 8 percent of the firm negotiated target cost estimate. The cost estimates as negotiated were based upon an 80 percent improvement rate. This rate of improvement is the average rate of the airframe industry upon the date of the execution of this contract. It means that each time the number of airframes produced is doubled, the latter half is produced for 80 percent of the cost of the former. The cost formula is represented in graph form in the industry by an 80 percent improvement curve. The incentive provision of this contract provides that in case petitioner in actuality underruns the firm target cost estimate, it will receive as profit, in addition to the 8 percent fixed fee, 20 percent of such underrun. In case of an overrun, petitioner must stand 20 percent of the overrun and the United States 80 percent provided the overrun does not exceed 125 percent of the firm target cost as negotiated. Petitioner must defray all cost overruns in excess of that percentage. At the termination of the contract the parties were to negotiate with respect to and finally agreed upon the actual allowable cost incurred with respect to performance of this contract. for B–47's delivered under this contract, petitioner, in 1952, received reimbursement of cost in the amount of $347,365,355, a profit of $33,440,590 of which the incentive profit was $4,903,340.

The following is a list by number designation of the contracts in force between the Air Force and petitioner and under which petitioner received renegotiable profits in 1952 and a general description of the goods manufactured and services performed thereunder:

Type of contract, and contract designation or contracting party	*Product or subject matter*
Cost-plus-a-fixed-fee contracts:	
21096	Model B–52 airplanes and spare parts.
19589	Research and development Bomarc pilotless aircraft missile.
22413	Model B–47 airplanes and spare parts.
6993	Tucson modification of model B–47 airplanes.
15065	Model XB–52 and YB–52 airplanes.
12883	Model RB–47 mock-up.
9945	Modification of model B–50 airplanes.
22064	Modification of model B–50 airplanes bombing and navigation systems.
22300	Flying boom modification program.
21388	Phase I—Design of airplane.
16141	Modification of model B–47 airplanes.
18130	Model B–29 and model B–50 airplanes bombing system.
22248	Modification of model B–47 airplanes.
9057	Prototype installation on model B–50 airplane.
19228	Electric power sets.
5154	Gas turbine power unit.
8119	Modification of model B–29 airplanes.
25915	Engine studies.
22108	Modification of model B–47 airplanes.
12226	Model B–47 productibility study.
26091	Model 502–2C Turboprop development.
17859	Installation of photographic equipment on model YC–97 airplanes.
14688	Modification of model B–50 airplanes.
50642	Model 502–2 gas turbine.
20014	Storage and services.
5167	Model B–50 and model C–97 airplane tool storage.
53503	Model 502–2 gas turbine.
25910	Model B–47 airplane studies.
20413	Flying boom developmental and modification program.
13875	"GAPA" guided missile program.
8004	Modification of model B–47 airplanes.
Incentive-type contracts:	
21407	Model B–47 airplanes and spare parts.
14764	Model KC–97 airplanes and spare parts.
14809	Model TB–50 airplanes and spare parts.
5097	Spare parts.
19823	Model B–50 airplane and spare parts.
9825	Model C–97 airplanes and spare parts.
5805	Model KC–97 airplane and spare parts.
5065	Spare parts.

Type of contract, and contract designation or contracting party	*Product or subject matter*
Price redetermination contracts:	
14722	Spare parts.
53204	Magnetic minesweeping equipment.
6245	Spare parts.
17738	Model B–29 and model B–50 kits.
18821	Model C–97 airplanes and spare parts.
18302	Modification of model B–50 airplane power packages.
6231	Spare parts.
15587	Model B–50 airplanes and spare parts.
14747	Spare parts.
8498	Spare parts.
8166	Bomb lifts.
28882	Spare parts.
8783	Services in connection with Government-furnished property.
25898	Sling assemblies.
13013	Model B–50 airplanes and spare parts.
21763	Spare parts.
	Miscellaneous minor contracts.
Fixed price contracts:	
Prime contracts:	
22009	Services of technical representatives.
3699	Repair of Government-furnished property.
7610	Suspension line clamps.
3700	Repair of Government-furnished property.
20383	Technical data.
20578	Spare parts.
25932	Sling assemblies.
53975	Model 502–2 gas turbine.
17803	Sling assemblies.
9853	Lock assemblies.
4529A	Analog computers.
70106	Maintenance parts.
6481	Modification kits for jack assemblies.
20756	Special tools.
	Miscellaneous minor contracts.
Subcontracts:	
Douglas Aircraft Company, Inc.	Material, parts, trailer, compressor unit.
Lockheed Aircraft Corporation	Material, parts, analog computer.
Curtis-Wright Aeronautical Corp.	Spare parts.
Briggs Manufacturing Company	Spare parts.
Grand Central Aircraft Company	Bomb rack assemblies and spare parts.
General Electric Company	Parts and engineering laboratory work.
National Rivet & Manufacturing Company	Material, parts.
Consolidated Vultee Aircraft Corp.	Pump assemblies, miscellaneous minor subcontracts.
No-fee facilities contracts:	
21378	Special facilities.
22291	Special facilities.
2862	Special facilities.

Petitioner produced B–47's in Government-furnished manufacturing facilities in Wichita, B–50's, Bomarc missiles, and B–52's at its plants in Seattle, and C–97's and KC–97's in a Government-furnished facility at Renton, a suburb of Seattle. Except to the extent petitioner used Government facilities for nonrenegotiable business, such facilities were furnished without charge to petitioner.

During World War II petitioner had used the Wichita plant for production of aircraft for the Air Force and had there employed over 20,000 persons in doing so. Upon termination of the World War II contracts, virtually all of this labor force had been discharged except for a skeleton crew of about 1,200. Because of the Air Force's insistence upon the manufacture of B–47's at Wichita, rather than Seattle and Renton where petitioner had an adequate, trained labor force, it was necessary for petitioner to recruit a new and untrained labor force again and of approximately the size there employed during World War II. Before 1952 the problem involved in recruiting such a labor force was that, in doing so, petitioner was in competition for labor with commercial manufacturers due to the "guns and butter economy" which then existed. In 1952 the problem so involved was that which necessarily arose in the fabrication and assembly of a new, complex, and extremely dense airframe represented by the B–47 with a new and inexperienced labor force which had to be trained. In addition, it was necessary for petitioner to train engineers and employees of Lockheed and Douglas in both Wichita and Seattle.

During its production of B–47's prior to 1952 and until April of that year, petitioner did not deliver in accordance with the contract delivery schedules. By April of 1952, it had attained the monthly rate of delivery required by the contracts and for the entire year produced and delivered the required number. Its delivery slippage was primarily due to its inexperienced and untrained labor force, but was secondarily due to the fact that its corporate executive and managerial organization was that of an essentially one-plant manufacturer. By January 1, 1952, petitioner had begun to make changes in its executive and managerial organization in accordance with recommendations made by a competent managerial consultant which it had employed prior to 1952 for the purpose of identifying and defining faults in its corporate setup and its operation which had the tendency to cause its cost of production to be high. The consultant, who had theretofore been without experience in the appraisal of an airframe manufacturer but who had much experience with automobile and other manufacturers, determined that petitioner's lack of direct labor standards was one of the prime factors leading to high production costs. He recommended the establishment and use of complete, factory-wide labor standards but estimated that such a procedure would require 3 years to complete. Although petitioner was using direct labor standards to a degree, it established a committee, which existed in 1952, for the purpose of studying the feasibility of establishing and using such standards in the production of an airplane such as the B–47. Over 60 percent of petitioner's labor force was employed in its assembly area, and it did establish and use additional labor standards in connection therewith. That portion of direct labor used in the fabrication of parts it determined was not amenable to such standards, however, and did not apply them to the same degree as to its assembly workers.

Petitioner determined, after study of the problem, that to the degree it had not followed the recommendations of the management consultant, such proposed changes would cost more than they would save in production cost.

Although automobile manufacturers had succesfully used direct labor standards in the production of B–17's and B–29's during World War II, those aircraft were so much less dense and presented such comparatively simple production problems that their comparison from a production standpoint with that of B–47's and B–52's is not significant. While an automobile manufacturer fixes his design at the inception of each new model and makes few if any design or other changes, Boeing, producing an airplane the design complexity of which, as originally accepted by the Air Force, was without parallel, was forced to incorporate about 8,000 design and other changes therein while producing 510 B–47's. About 2,000 such changes were ordered by the Air Force in 1952. The Air Force had adopted a policy that speed of production was more desirable than absolute conformance with contract specifications and to that end accepted certain B–47's which did not entirely so conform, reduced petitioner's profits according to such specification shortages, and established a modification center at Tucson, Arizona, wherein to bring such planes to specification. This procedure is not uncommon in the Air Force procurement of aircraft.

Under contract 6993 entered into in December of 1951 petitioner agreed to complete these modifications which in addition to bringing each plane to the specifications existing at the time of its construction also in some cases consisted of the incorporation therein of changes ordered as a result of the growth of the B–47. For 1952 petitioner was reimbursed for costs incurred in such modification in the amount of $11,661,257 and received a profit in addition thereto of $240,341.

The Air Force directed that the modification work be subcontracted and when it appeared in 1951 that the subcontractor was performing in an unsatisfactory manner and petitioner suggested to the Air Force that it (Boeing) perform the work, the Under Secretary of the Air Force refused to permit the change. In order to make it possible for the subcontractor to perform adequately the required modifications, it was therefore necessary for petitioner to assign many of its top-grade personnel to the subcontractor's plant in order to train its employees. As of October 2, 1952, 178 of Boeing's finest shop, planning inspection, and methods personnel were so assigned. Whatever the deficiencies were with respect to performance under this contract during 1952, they are not properly laid at petitioner's door. Its performance of this contract, in the light of the above circumstances, was reasonably efficient.

As before stated, the basic B–47 is susceptible to great growth possibilities. Changes ordered by the Air Force emanated alike from it and petitioner. As the growth of the bomber advanced the Air Force concept of its military use altered and this alone accounted for many changes. It was contemplated by both parties to these contracts at their inception that the B–47 would present novel production problems; that the speed of its production was a paramount necessity taking priority over complete compliance with contract specifications; that the later bombers produced, although like those

first produced in basic conformation, would be radically changed in many ways throughout the performance of the contracts, and that time-consuming testing would be required with respect to such changes. In fact, both parties came to realize, as was the fact, that the B–47 and the changes made therein represented such an advance in the state of the art that the design of electronic and other equipment, such as the bomb-navigation system and jet engines, to be furnished by the Government, had not sufficiently kept pace so as to permit petitioner's incorporation of such equipment during production in some instances. Nevertheless such variances from contract specifications were listed as shortages and deficiencies at the time of delivery of aircraft which for such reasons did not conform to contract specifications.

Certain deficiencies in design engineering were disclosed upon testing of the B–47's. Typical of such deficiencies were the "Dutch-roll" and bomb bay buffeting. Both were conditions which became evident upon operation of the bomber at speeds never before attained by bombardment aircraft. The first has been described hereinbefore in connection with the reversal of lateral controls. The latter was caused by the action of air currents entering the bomb bay when its doors were opened while the plane was operating at extremely high speed. This air action had an adverse effect upon the accuracy with which bombs could be delivered. Neither condition could have been reasonably anticipated prior to the high-speed testing of the B–47. Another deficiency in design engineering was disclosed by testing. This was damage to the trailing edges of wings caused by high-frequency vibration of a part of the fuel injection plumbing contained in the wings where, at certain speeds, such vibration would conform to and be accentuated by engine vibration. Each of these deficiencies was corrected by petitioner within reasonable times after their discovery. No airplane in the procurement experience of the Air Force was ever delivered without deficiencies and shortages.

The term "combat-capable" or "combat-ready" was in the minds of both parties to B–47 contracts descriptive of the condition of B–47's which were to be delivered by petitioner although that term is not used nor the thought otherwise expressed in the contracts. The specifications and the changes as ordered from time to time, though, do sum up to the Air Force's concept of those terms. Throughout the performance of the B–47 contracts the concept of combat capability, although basically unchanged, nevertheless altered with change orders brought about as the growth factor of the plane developed. From time to time B–47's were delivered to and accepted by the Air Force which therefore were not "combat-capable." Had the need arisen, however, to use such planes in case of attack upon the United States, they could and would have been used to deliver bombs to an enemy target. In fact, in 1952, the B–47 was the chief deterrent weapon possessed by the United States. Although some such "deficient" planes were delivered, their mere presence at airbases around the world had a deterrent effect upon the enemies of this country.

The Air Force had adopted a policy of wide subcontracting for a twofold purpose. It desired the manufacture of B–47's to be widely dispersed in order to lessen the total effect upon their production of an attack upon the continental United States. Seattle was a prime and easily located target for enemy bombing. During 1952 it was desired

by the United States that employment be furnished to the economically depressed manufacturing areas of the country. Petitioner, as prime design contractor therefor, in addition to its own production commitments, became responsible for the production of B–47 parts in the plants of about 200 subcontractors and parts suppliers throughout the United States. Some of them, principally those which had been automobile or automobile parts manufacturers, not previously having had experience with the extremely close tolerances required for B–47 construction, had difficulty in the performance of their subcontracts and fell behind delivery schedules. It was necessary in those instances for top management personnel, much needed in petitioner's own plants, to be sent to the plants of such subcontractors to instruct them in production methods and procedures. Upon some occasions it was necessary for petitioner to cancel subcontracts with such subcontractors. Petitioner fulfilled its obligations with respect to subcontractors with ordinary efficiency.

During 1952 delivery schedules were altered by the Air Force largely for the purpose of allowing sufficient time for petitioner's incorporation in the B–47 of the numerous changes ordered therein, the increased amount of testing required thereby, and additional time for the arrival at its plant of necessary Government-furnished equipment, such as the bomb-navigation system. For that year petitioner delivered and the Air Force accepted B–47's in accordance with the contract schedules.

Petitioner's total investment in machinery, equipment, property, and plant at Wichita during 1952 averaged $2,397,866. Government-furnished facilities of the same kind at Wichita averaged during that year $34,875,128. About 88 percent of the plant floorspace used by petitioner in 1952 in Wichita in its production of B–47's was Government owned and furnished to petitioner without charge.

In addition to the land, plant, machinery, and equipment referred to above, the Government paid for the special (or contract) tooling, including jigs, dies, fixtures, molds, patterns, and special gages, usable on the B–47 airframe only. Machinery and equipment are usable in the production of several types of airplanes or in manufacturing generally, while special tooling is usable only in the production of one model or type of airplane. The special tooling was included in the supplies called for in the contract, so that petitioner not only was reimbursed for the cost of procuring the special tooling, but received an element of profit thereon.

Under B–47 contract 22413, as under its other cost-plus-a-fixed-fee contracts, petitioner was reimbursed "currently" for costs incurred in the performance of the contract, in weekly payments upon the payroll sheets, invoices, and other evidences of costs to petitioner. In addition, petitioner received 90 percent of its fixed fee in monthly installments based upon estimates of the percentage of completion of the work. Any unpaid balance of the fee was to be paid to petitioner upon completion of the work.

Under B–47 contract 21407, as under the other incentive contracts in force in 1952, petitioner received partial payments of 90 percent of the lower of the cost to petitioner of the property acquired or produced in the performance of the contract, or of the total contract price for articles still to be delivered. The remainder of the price

was paid to petitioner upon the delivery of the airplane or other articles called for.

In the inception of the cost-plus-a-fixed-fee and incentive contracts under which B–47's and C–97/KC–97's were manufactured, arm's-length negotiations took place with respect to each aspect thereof. The same type of negotiation took place with respect to periodic change orders and particularly with respect to the fixing of a firm target cost. The latter event took place in the case of B–47 contract 21407 in November 1952. The negotiators were highly skilled and of more than ordinary competence on each side of the bargaining table. The negotiators had available to them experience in airframe procurement extending over many years and including the more recent procurement during World War II. They considered and gave what they considered to be proper effect to petitioner's net worth as applied to its prospective earnings, the fact that Government facilities were furnished petitioner free of charge, the rates of profit prevailing in the airframe industry, the amount and source of public and private capital to be employed by petitioner in performing the contracts, petitioner's contribution to the defense of the country, and, in fixing firm target costs, to the "deficiences" of already delivered airframes. The firm target costs thus arrived at were in excess of $30 million below the proposals submitted by petitioner. Considering the complexity of design and the great growth potentiality of the B–47 with the unknown or unforeseeable changes which were to result therefrom, the negotiators arrived at reasonably accurate cost estimates.

Contract 21407 provided that for the purpose of negotiating a firm target cost petitioner was to furnish the Air Force its proposed firm target cost estimates and data in support thereof immediately upon completion of the 100th B–47, which event took place in June of 1952. Negotiations immediately commenced after petitioner's compliance with this provision, but due to the desire of the negotiators to obtain as much actual current cost data as possible, petitioner was required to furnish such data currently as negotiation continued. Largely because of this procedure the firm target cost was not agreed upon until November of 1952.

Boeing's corporate existence to and including 1952 has been marked from its beginning by a state of abnormalcy in the sense that it has not experienced any period where, except for long-lived Government contracts, its business has become stable. Its sole customer for all intents and purposes has been the United States. The exigencies of international politics have to a great extent constituted the catalyzing factor which has precipitated contracts from that customer. Whether those charged with the defense of this country felt the imminence of danger and the degree thereof determined the size of those contracts. The contracts could and upon occasion were terminated with little or no notice by the United States. This resulted in petitioner being forced to discharge nearly all its direct labor force and all but key people in its engineering staff. When a new contract was forthcoming it then became necessary to reemploy labor and engineering personnel and train them in petitioner's manufacturing techniques, a time-consuming and costly process. The extent of employment was dependent upon the size of each contract and the extent of necessary

training depended upon the nature of the product to be produced thereunder and the past experience of new employees.

Petitioner's price per pound of production in the case of the C–97/KC–97 decreased from $35.89 in 1946 to $15.15 in 1952 and its profits per pound decreased accordingly. In the case of the B–47 its price per pound decreased from $47.10 in 1949 to $22.53 in 1952.

The petitioner's renegotiable profit for 1952, $56,734,119, is 98 percent of the amount of its book net worth, $57,794,057, as of the beginning of that year. Adjusting its book net worth at the beginning of the year to its average book net worth for 1952 and for the value of its design, engineering, and overall manufacturing know-how, we find its percentage of profit to net worth was approximately 50 percent in 1952. Its volume of sales was among the 50 leading American industrial concerns measured by the volume of sales. Of the 50 leading concerns, with the exception of petitioner, the average percentage of profit to net worth during 1952 was 26.9 percent.

During 1952 petitioner's labor costs and those for materials, with the exception of direct labor in the case of C–97/KC–97 production, were influenced by a rising market and were higher than in the immediately preceding years. At the same time its total average cost per airplane produced based upon a reasonably adjusted statement of work performed, in the case of B–47 production, decreased from $1,781,000 for those produced under contract 22413 to $861,000 for those produced under contract 21407 and its cost per plane in the case of C–97/KC–97's produced under contracts 12450, 18821, 9825, and 14764 decreased respectively as follows: $1,286,000, $635,000, $597,000, and $438,000.

Due largely to a rising general economy petitioner's production overhead costs at Wichita rose from $2.14 per hour in 1951 to $2.82 per hour in 1952.

Petitioner's compensation to its corporate officers was low in 1952 in comparison to industry generally. Its dividend policy was conservative based on the same comparison. It paid bonuses to its employees under an "incentive compensation plan" of $2,500,000. The payment of bonuses was based upon the profits of the company and the plan was implemented at least partly as an incentive to lower the overall cost of production.

Petitioner's products under the contracts here involved, with the exception of the C–97, bear little similarity to its peacetime products. The only similarity is that in each case the product is an airplane. The C–97 is the military counterpart of the Stratocruiser commercial airliner which was produced for a short time by petitioner at the close of World War II. Its production of Stratocruisers resulted in substantial financial loss. It, in fact, has never prior to 1952 successfully engaged in business on a commercial basis. Its construction of Stratocruisers for the commercial market was primarily for the purpose of maintaining in its employ a core of experienced engineers and production personnel. In its history petitioner has had no peacetime experience which is reasonably comparable to its wartime experience. Its history discloses no period of normal operation which is reasonably comparable to its performance under the contracts at issue.

Petitioner subcontracted, in terms of direct labor-hours, 27 percent of its production of B–52's, 32 percent of B–47 production, and 25 percent of KC–97 production. Its production of B–47's and KC–97's

in 1952 was almost entirely by the use of Government-furnished facilities.

Its 1952 profits, compared to industry as a whole, were high.

The petitioner's profits of $56,734,119 for 1952 are unreasonable and excessive in the amount of $13 million.

OPINION.

The burden of proof in these *de novo* proceedings rests upon the petitioner to establish by a preponderance of the evidence that its renegotiable profits during the year ended December 31, 1952, of $56,734,119 were reasonable. In determining the reasonableness of those profits, we are guided by the provisions of the Renegotiation Act of 1951 and aided by the rules and regulations of the respondent and the decisions of this Court. The phrase "profits derived from contracts with the Departments and subcontracts" as used in section 103(e) of the Act is defined in section 103(f) thereof as "the excess of the amount received or accrued under such contracts and subcontracts over the costs paid or incurred with respect thereto and determined to be allocable thereto."

In its pleadings and on brief respondent takes issue with petitioner's right to favorable consideration with respect to every criterion for decision provided by applicable law and its own regulations. Even so, however, its primary contention is that petitioner's profits constitute an unreasonable return upon its invested net worth during 1952. Petitioner recognizes that its return on its book net worth during that year is abnormally high but contends first that its book net worth is an unreliable, inaccurate, and unfair picture of its true net worth and, lastly, that any use of the net worth factor in this particular case is unwarranted and of no value in determining the reasonableness of its profits; that, in lieu thereof, we should measure its profits by a comparative ratio of its profits to its sales.

We cannot agree with either contention. The contractor's return on its invested net worth must be given consideration but in the light of and in conjunction with the other statutory factors. While it is true that petitioner's return of profit upon its book net worth indicates an unusually high profit, its books do not account for the value of its design engineering and manufacturing know-how. Although the record does not show the specific value thereof, when considered as a whole, it does indicate that these categories of know-how in the highly competitive airframe industry constitute an asset which is of great value which should be added to its book net worth in applying the net worth factor. See *Aircraft Screw Products Co.*, 8 T.C. 1037.

The petitioner obtained the contracts here involved by virtue of the application of this asset in competition with its competitors. In order to remain competitive in the industry, it is necessary that the design engineering staff of a member not only keep pace with the rapidly advancing art of airframe design, but be capable of leading the advancement. This we think has occurred here with respect to the B–47 and B–52 designs. It is reasonable to conclude that this asset in petitioner's case was of at least the value of all its book assets combined. So viewed petitioner's return on its whole net worth is approximately 50 percent.

Respondent contends that petitioner was inefficient in its performance of each contract here at issue but emphasized on trial and on brief only those involving B–47, C–97/KC–97, B–52, Bomarc, and B–50 production in that order. We here follow this lead. We have found as a fact that petitioner, under the conditions prevailing in 1952, performed under the contracts in a reasonably efficient manner. Over 61 percent of its profits for 1952 was derived from contracts 22413 and 21407 under which it manufactured B–47 airframes. Respondent, in contending that petitioner was inefficient, completely disregards the true conditions under which these contracts were performed. The B–47 was of a character with which neither the Air Force nor any manufacturer had theretofor acuired more than meager manufacturing experience. It is true that the basic principle that an airplane must consist of fusilage, wings, control surfaces, landing gear, and a means of motive power was ancient. It is even true that the sweptback design of a wing and a tandem or bicycle landing gear did not emanate from petitioner. The fact is, however, that the use of a thin, sweptback wing of high aspect ratio on a bombardment-type aircraft was unique in 1952 and prior thereto. The B–47 was designed to perform and did perform at speeds and altitudes never before attained. It contained equipment of a nature never before used in bombing aircraft. The nature of such equipment, its fittings, wiring, and placement created manufacturing problems for which there was little if any precedent. The B–47 was the "densest" bombardment aircraft ever produced. The B–47 design as accepted by the Air Force during World War II was so accepted substantially because of its unusual growth potentiality. Both parties to the contract anticipated, as was the fact, the exploitation of these possibilities. Because of this factor over 8,000 change orders were issued by the Air Force during the life of contracts 22413 and 21407, 2,000 of them occurring in the year 1952. These changes in many instances required an alteration in the design of the B–47 and many of such changes required exhaustive testing after their incorporation. The extent of such testing and problems which arose from the changes and were disclosed by the testing we are convinced could not reasonably have been foreseen by petitioner.

Another circumstance which is disregarded by respondent is the effect of the Air Force's changing concept of combat suitability or combat readiness. Neither of these terms was used in the B–47 contracts, but it is clear to us that both parties knew and contemplated that the airplanes were not manufactured in accordance with contract specifications unless they were capable of delivering their bomb load accurately upon an enemy target while providing a degree of safety for the crew and the capability of return to base. However, combat suitability was a variable term in this instance. As exploitation of the B–47 growth potential progressed, more and better performance was expected by the Air Force in order for the plane to fulfill its concept of combat capability. Some of the B–47's delivered to and accepted by the Air Force in 1952 were not, by this measure, combat-suitable. In many instances this was so because Government-furnished equipment, such as parts of the water injection system, jet engines, bomb-navigation system, and electronic defensive armament, had not been available to petitioner at the date of delivery. In most cases their nonavailability was caused by the fact that their manu-

facturers had not kept pace with the advancement in the art of airframe design exemplified by the B–47.

Respondent complains that the B–47's in some cases evidenced faulty and inefficient design engineering. Typical of such cases is the "Dutch-roll," cracking of trailing wing edges caused by sonic vibration of water injection plumbing installed in the wings, cracking of and difficulty in jettisoning the cockpit canopy, and bomb bay buffeting caused by the air currents entering the bomb bay when its doors were opened. Each of these difficulties became evident only upon the high-speed testing of the airplane and could not in our opinion have been, by the use of design engineering efficiency, foreseen prior to actual testing. These defects, along with others pointed to by respondent, were corrected as speedily as was reasonably possible by petitioner. We note too that the Air Force in all its procurement experience had never known of an instance where an airplane had been delivered without deficiencies and it is in fact clear from this record that it viewed the B–47 procurement with such deficiencies in mind. It adopted a policy upon the advent of the Korean hostilities of accepting B–47's as rapidly as possible whether or not they were in every respect combat-suitable and, under contract with petitioner, set up a rehabilitation center at Tucson, Arizona, wherein to bring such planes to a state of combat suitability.

Respondent complains too that deliveries of B–47's fell behind contract delivery schedules. While it is true that the required monthly rate of delivery was not being met during the first part of 1952, that rate was met by April of that year and its deliveries for the entire year were in accordance with contract delivery requirements. Under the circumstances we are unable to conclude that petitioner was inefficient in its design engineering or the quality of B–47's produced or its compliance with delivery schedules in its production of B–47's.

Respondent, in contending that petitioner was inefficient, points to petitioner's failure to adopt and use time and motion man-hour standards in its B–47 production at Wichita. In doing so, it implies that petitioner should have more closely complied in that respect with the recommendations of a management consulting firm which petitioner had employed in 1951 to make a management survey for the purpose of identifying management problems in its corporate organization and management operations which tended to result in high cost of operation. That petitioner obtained the consultant's report and recommendations tends, it seems to us, to evidence an intention and effort to lower its cost of operation. That petitioner did not during 1952 adopt and put into effect completely the consultant's recommendations is undertandable and not inconsistent with the efficiency of its operation. The consultant, although widely experienced in the operation of manufacturers generally, had never theretofore surveyed and made recommendations for the improvement of operation of an airframe manufacturer. An examination of his report and review of his testimony leads us to believe that he was preoccupied in his opinions with the use of direct labor standards in the automobile industry and particularly with respect to such standards used by that industry in the production of B–29 bombers during World War II. We do not find that the operation of an automobile plant to construct either automobiles or B–29's was sufficiently akin to petitioner's pro-

duction of B–47's to warrant a conclusion that universal company-wide use of direct labor standards would necessarily have resulted in greater efficiency and resulting lower cost of production. The underlying difference lies in the nature of the articles being manufactured and the manufacturing policy relating thereto. An automobile is mass-produced in numbers far greater than those involved in petitioner's production of B–47's. Mass-production machine tools are there usable to a much greater extent because of the auto-manufacturer's policy of adopting a fixed and virtually unchanged design for each model, production of which is much greater in number, while petitioner was here required in the year 1952 alone to adopt and adapt into its manufacturing operations about 2,000 changes, many of them being so basic as to require a change in design while producing comparatively few B–47's. To a lesser degree, the same may be said with respect to the manufacture of B–29's. Compared to the B–47, its design was relatively simple and it was much less dense in that more internal space was available for the assembly operation. Petitioner employed only about 60 percent of its direct labor in the assembly area of its plant, while the remaining 40 percent was employed in the fabrication areas thereof. After detailed and conscientious study of the recommended adoption of complete labor standards, petitioner, in the use of reasonable management judgment, determined to use such standards in its assembly function and to use them to a lesser degree in its fabrication function. It had employed such standards in its assembly areas prior to the report of the consultant and continued to do so in 1952. In the consultant's opinion a period of 3 years would have been required to install complete labor standards in petitioner's plant. Petitioner judged it to be doubtful that the cost of installing such standards over that period of time would actually lessen its cost of production. We think petitioner's use and nonuse of direct labor standards was justified under the above circumstances and did not result in inefficient performance leading to high production costs.

Respondent contends too that defects in petitioner's corporate executive line of authority and responsibility tended to inefficient management and resulted in high production costs. It is true that prior to January 1, 1951, nearly all of petitioner's executive authority and the responsibility for its overall supervision and management resided in its president. Its character was that of a one-plant, single-site manufacturer. In essence, when petitioner was not manufacturing under contracts with the Government, it was a one-plant operation centered in and about Seattle. When in 1952 the Air Force greatly expanded its demand for B–47's and still required that they be manufactured in the Government plant at Wichita, Kansas, the resulting decentralization of petitioner's operation would have placed a nearly impossible burden upon its president had petitioner failed to alter its executive function. The management consultant, above referred to, had pointed to the foregoing situation as a defect in petitioner's corporate organization which would lead to high-cost production and had, in 1951, recommended rather sweeping changes therein. Among such recommended changes was the delegation by the president to executive vice presidents of a portion of his executive authority and responsibility. As of January 1, 1952, petitioner had transferred such authority to an executive vice president who was made responsible for

petitioner's Wichita operation, and he remained in that capacity throughout 1952 and thereafter. In our view whatever high production cost tendencies existed prior to 1952 which were caused by the one-plant, one-site character of petitioner's corporate organization were with reasonable promptness corrected or in the process of being corrected by January 1, of 1952.

Respondent also contends that petitioner was inefficient and negligent in its compliance with the directives of the B–47 Committee, referred to in our findings. The chief complaint is with respect to petioner's alleged failure to furnish Lockheed and Douglas timely with master gages and design information which would permit those companies to begin the production of B–47's earlier. Although the record does indicate some delay in the early stages of the operation of the B–47 Committee with respect to petitioner's furnishing of master gages, it also shows clearly that because of petitioner's cooperation and attention to the directives of the Committee, Lockheed and Douglas were able to begin full production of B–47's earlier than had been expected by the Committee or the Air Force. We think respondent's complaint in this respect is not well grounded.

We have carefully examined the record with respect to the alleged inefficiency of petitioner in the supervision of its many subcontractors and suppliers and cannot conclude that, under the circumstances, petitioner was less than ordinarily efficient in this regard. The policy of the Air Force with respect to subcontracting was that it be carried out on as wide a base as reasonably possible; that the plant facilities and labor force of economically depressed areas of the country be employed wherever possible. This resulted in petitioner, which as prime contractor was responsible for the performance of subcontractors, having to provide the necessary supervisory and other personnel to supervise about 200 subcontractors and suppliers with respect to the B–47 production alone. As has been before stated, the tolerances necessary and allowable for B–47 production were theretofore virtually unknown in the manufacturing industry in this country, particularly in the manufacture of automobiles. Automobile manufacturers comprised a substantial proportion of the subcontractors used in the production of B–47's. Even though petitioner needed its experienced and trained personnel in its own production of B–47's, it was forced to assign substantial numbers thereof to the subcontractors' plants for varying periods in order to train sufficiently the subcontractors and in some cases assist in the layout of machinery in their plants to permit them to perform adequately under their subcontracts. In some cases it was necessary that subcontracts be canceled because of the inability of certain subcontractors to produce to such close tolerances. It must be borne in mind too that petitioner's supply of experienced and trained personnel was limited in 1952. No subcontractor could be employed or discharged by petitioner without the authorization of the Air Force or the B–47 Committee. Even so, respondent complains that petitioner did not furnish sufficient supervisory help and, in those cases where it was necessary to discharge subcontractors, did not discover their inadequacies and discharge them soon enough. We think respondent is unreasonable in this complaint and that petitioner was reasonably efficient in its relations with subcontractors.

Petitioner's performance under the B–47 contracts is graphically illustrated by its cost underrun of the 80 percent improvement curve which represents the average cost of production improvement in the airframe industry in this country. Its performance was on a 65 percent improvement curve. Respondent contends that this illustration is misleading and not significant because such an improvement curve, prior to the setting of a firm target cost, incorporates costs which were incurred only once and which are nonrepetitive. We are unable to follow this line of reasoning as the very nature of an improvement curve seems to us to require the inclusion of all costs repetitive or nonrepetitive, and it is obvious that, nonrecurring expense being included in both curves, the cost underrun is valid and significant. The inclusion of nonrepetitive costs which might be expected in the early stages of production of an article as complex and unique in its manufacturing problems as a B–47, would be the very factor which would impart the rapid reduction in cost evidenced by an improvement curve of these percentages. Because petitioner's production costs underran the indutry average, $5,826,656 profit accrued to petitioner in 1952 under the incentive provisions of its contracts, over $4 million of which is attributable to contract 21407.

The record is clear that in 1952 petitioner's deliveries of B–47's were on schedule and that the B–47 which it produced was of good quality and exceeded in performance the expectations of the Air Force. If any portion of petitioner's profits for 1952 was unreasonably high, it did not result from any inefficiency in its manufacture of B–47 bombardment aircraft.

In 1952 petitioner was under contract to manufacture B–47's in Wichita, B–52's and Bomarc missiles in Seattle, and KC–97's in Renton. In addition it was the prime contractor responsible for the performance of about 200 subcontractors and many parts suppliers and also was required to do all things necessary to the advent of two of its competitors into the manufacture of B–47's in addition to functioning as a member of the B–47 Joint Production Committee and overseeing and being responsible for the performance of a subcontractor located in Tucson, Arizona, who was charged with the bringing of all "deficient" B–47's to a state of "combat capability" or "readiness." Generally, with respect to each of its functions a different person or officer, responsible to the Air Force, was charged with overseeing petitioner's performance in respect thereto. In each case such individuals were understandably primarily interested in only that function each was to oversee. The tendency of such overseers was to consider as performance defects any emphasis placed by petitioner upon one or the other of its contractual obligations which was at all detrimental to another such obligation. We think this record is replete with such instances which account largely for respondent's contention that petitioner lacked efficiency in the performance of these contracts.

Complicating the picture still further is the fact that the manufacturing problems incident to the B–47's were in many respects unprecendented and had to be solved as production proceeded and this while petitioner was incorporating some 2,000 changes in the product being manufactured, many of which changes involved changes in or new design. The tooling problems with respect to preparation for production of B–52's were so complex and unprecedented that they

constituted the most difficult such problems an experienced aeronautical engineer had ever encountered.

The Bomarc missile prototype construction and testing represented the first effort of the United States to enter the anti-missile-missile field and also necessarily presented theretofore unknown problems. With respect to B–52 and Bomarc contracts both parties thereto were more or less groping in the dark with respect to the costs involved. The statutory criteria for decision are in large part unhelpful with respect to the latter contracts because of the nature of the work being performed and the products produced thereunder.

Petitioner's performance under its C–97/KC–97 contracts leaves something to be desired in the way of design engineering efficiency. This airplane is a tanker, the purpose of which is to refuel B–47's in flight. Important in their equipment is tankage for aircraft fuel. In 1952 it developed that such tanks had been designed by petitioner and produced by a subcontractor with the metal comprising the ends thereof of insufficient gage to withstand the stresses of changes of altitude so that some of them collapsed in use. Although this defect was promptly corrected after its discovery, we think petitioner, by the use of ordinary efficiency, could and should have foreseen the problem and designed to avoid it thus reducing its cost of production. Other deficiencies in the KC–97 pointed to by respondent do not appear to have been foreseeable or discoverable short of actual testing, and they appear to be the defects which would normally appear in the development of a new product.

Petitioner's performance of its B–50 contracts was not impeded by the factors above noted with respect to performance where a new product was involved. The B–50 is an improved version of the B–29 bomber with respect to which petitioner had, during and before 1952, much manufacturing experience. Its contract 14809 called for the delivery of 36 B–50's in 1952. It actually delivered only 22 of them. The record contains no adequate explanation or excuse for Boeing's failure to deliver B–50's in accordance with contract delivery schedules. Petitioner's cost reimbursement under these contracts was $22,557,860 and its profits $1,852,366. It was clearly inefficient in its delivery of B–50's in 1952.

Because of the assurance of return of all costs expended or incurred by petitioner with respect to its performance of the contracts here involved and the periodic payment of profits which are based upon negotiated estimated costs, we find petitioner incurred no risk of loss thereunder within the meaning of the Renegotiation Act by reason of any failure to meet delivery schedules or failure or inability to meet quality specifications. The only possible risk inherent in any of these contracts is exemplified by the B–47 incentive contract where petitioner would receive no profit but instead would experience a loss in case its cost of production overran the firm target cost estimate by 125 percent. Under the facts we do not think this risk was at all significant. It is clear from the record, however, that petitioner did incur considerable risk of another sort.

As we have found, the airframe industry is extremely competitive and has experienced increasingly rapid advancement in the art of airframe design. This condition has, in fact, led us to conclude that petitioner's design engineering staff and manufacturing know-how are to be considered a part of its net worth in considering the statu-

tory net worth factor. Because of the decision of the Air Force to have B-47's manufactured by two of petitioner's competitor's and petitioner's cooperation with that decision, these competitors were placed in possession of master gages and designs developed by petitioner and their engineering and labor personnel trained in petitioner's manufacturing technique and procedures. In short, the competitors were given petitioner's manufacturing know-how with respect to the manufacture of an airplane which was clearly a prototype for future commercial airline use. Petitioner believed at the time that a potential commercial market existed for such airframes. Afterevents have borne this out. The benefits petitioner would normally have expected to reap because of its position as the designer and developer of the first sweptwing jet-powered airplane suitable for commercial airline use were voluntarily relinquished in its cooperation with the B–47 Committee. That it was paid for its part in making it possible for Douglas and Lockheed to manufacture B–47's does not in our view detract from the risk it incurred nor adequately compensate it for this type of risk.

Because in this case we lack most of the statutory criteria for determining the comparative reasonableness or excessiveness of petitioner's 1952 profits, we have used the net worth factor to a large degree in determining the reasonableness or excessiveness of petitioner's profits as a comparison to other business. In doing so, we have adjusted petitioner's book net worth to include what we have concluded is a fair value for its design, engineering, and manufacturing know-how and have used an average 1952 book net worth as distinguished from its beginning 1952 book net worth. We have not adjusted the book net worth to reflect current market value of its assets because there is no comparative criteria in the record based upon such an adjustment to net worth. We have considered the fact that, whatever petitioner's adjusted book net worth may be, it was to some extent invested in its work in progress during 1952 for a period beginning years prior to 1952 with its first efforts in the design and development of the B–47. We have by this method arrived at a ratio of profit to net worth of about 50 percent. The ratio of profit to average book net worth for all manufacturers in 1952 was 22.1 percent and when limited to the six manufacturers of airplanes and parts having no long-term debt, before renegotiation of their profits the ratio is about 44 percent.

Petitioner urges that in lieu of the net worth factor we should use as a more meaningful factor the comparative ratio of profit to sales. We have not done so here for the reason that such a factor does not take into consideration one of the important differences (so far as the record shows) which may exist during 1952 between petitioner and other manufacturers including those engaged only in airplane manufacture. That difference may be the great preponderance in petitioner's case of Government-furnished facilities and production equipment over that furnished by petitioner. The record is silent in this respect with regard to others engaged in the manufacture of airplanes and other manufacturers generally. We think, as the respondent contends, that petitioner's profits cannot be viewed in the same light as those of a manufacturer which in performing a Government contract furnishes all or a major proportion of the manufactur-

ing facilities used. It seems clear to us that, regardless of petitioner's efficiency, its contribution to the defense effort, the risk it assumed under the B–47 contract, and the complexity of the manufacturing techniques required in its performance of the contracts at issue, its function with respect to the production of B–47's and C–97/KC–97 airframes was, as respondent contends, to come extent that of a manager and not a manufacturer. That is not to say, however, that in the light of thee other statutory factors, petitioner's profits can be limited by this fact alone.

Clearly in producing a new and complex product as rapidly and of the quality represented by the B–47, beginning with a virtually unmanned facility (the Wichita plant) and at the same time making it possible for its two chief competitors (Lockheed and Douglas) to manufacture them and supervising the output of highly complex parts by many inexperienced subcontractors and suppliers, constitutes performance of these contracts which is deserving of higher compensation than would be indicated by the sole criterion of the percentage of contractor-owned facilities employed in the manufacture of B–47's and C–97/KC–97's. Particularly is this true when the importance of the B–47, the B–52, and the Bomarc missile to this Nation's defense is considered.

We have therefore concluded that on a comparative basis petitioner's 1952 aggregate profits are unreasonable and excessive to an amount less than that contended for by respondent.

The contribution made by petitioner to the defense of the United States must be viewed with respect to its 1952 experience alone. Basically its design of the B–47 and the KC–97, together with its in-flight refueling equipment, and its design of the B–52 were accomplished prior to 1952 and cannot be considered a constribution in that year. The connotation of the word "contribution" as used in the Renegotiation Act is, in our view, broader than its dictionary meaning. It includes not only services performed without compensation, but the cooperative and enthusiastic performance of that work and, in addition, the importance of the product produced and the services rendered, even though paid for, to the defense of this country.

There can be no doubt here that those charged with this country's defense in 1952 believed the country to be under imminent peril of attack by an enemy or enemies; that they had fixed upon the B–47 bomber as our chief deterrent to such attack and were so determined to obtain B–47's as rapidly as possible that a policy was adopted whereby they would be accepted by the Air Force with deficiencies in combat capability in order to have them in apparent readiness at our Strategic Air Command bases around the world. They constituted, in 1952, the best air weapon in the possession of this country and were in that year superior in quality and performance to any bomber or interceptor airplane then in existence as an operational weapon.

The KC–97 tanker airplane and its in-flight refueling equipment were likewise of great importance to our defense for its function was to extend the range and bomb-carrying capacity of the B–47.

The development of the Bomarc antimissile intercontinental ballistic missile was the initial phase of this country's effort to counteract the threat of nuclear attack from abroad, and we think its importance as a contribution to this country's defense is self-evident.

We take judicial notice of the fact that the creation of each new and increasingly efficient and potent weapon throughout history has been accompanied or closely followed by the creation of corresponding defenses thereto. For that reason the designing and construction of tooling for the two experimental B–52's were likewise of vital importance to the defense of this country. The B–52 represented an advance over the B–47 as great or greater than the latter's advance over the B–29 of World War II fame. It has now become the chief deterrent weapon of the Strategic Air Command and as such, together with our missile strength and the continued use of B–47's, constitutes a major defense weapon. Petitioner's cooperation with the B–47 Joint Production Committee and with its incidental delivery to its competitors of not only designs and master gages developed for manufacture of the B–47, but its delivery to them of and the actual training of their personnel with respect to its manufacturing and procedural know-how constitute, we find, an important and substantial contribution to this country's defense in 1952.

Prior to 1952 petitioner's corporate character was essentially that of a centralized, one-plant manufacturer. Upon the acceptance by the Air Force of its B–47 design with the resulting contracts for its manufacture at Wichita, Kansas, and the contract for the manufacture of C–97/KC–97's at Renton, Washington, petitioner was forced to reassess the capability of its corporate and managerial organization in the light thereof. At least partly at the suggestion of the Air Force, it employed the services of a competent management consulting firm for the purpose of identifying and making suggestions with respect to the correction of such corporate organizational defects as would tend to cause inefficient, high-cost operation. It, thereafter, beginning in January of 1952, began to alter its corporate organization so as to delegate its executive managerial function to executive officers who were placed in immediate charge of and made responsible for the operation of each of its manufacturing divisions.

The source and nature of materials used by petitioner do not appear to be of material significance here. The complexity of petitioner's manufacturing techniques was controlled by the complexity of design of the B–47 and B–52 airplanes which we find to be unprecedented in the airframe industry and with which we have dealt more in detail elsewhere herein. The bulk of the subcontracting, its nature, and petitioner's problems in connection therewith have also been dealt with above.

The statutory use of the phrase "inventory turnover" has reference not to a parts and materials supply but to the item of property to be sold. In this case it consists of work in progress, i.e., airframe at varying stages of completion. We do not find the inventory turnover factor to be of significance here for the reason that the evidence before us indicates that various methods of computation, all of them justified to some extent, produce turnover rates for petitioner of from 20 times to 2 times per year. Six inventory turnovers was the average in 1952 for the 49 other leading American industrial concerns heretofore mentioned.

Of greater significance we think is the fact that petitioner's operations were largely financed by the United States through early reimbursement of costs and payments of profit through progress payments

and the furnishing of Government-owned manufacturing facilities. Petitioner contends that the latter factor particularly and the former generally have been given due consideration in the negotiating of the rates of profit negotiated with respect to the B–47 and C–97/KC–97 contracts. Respondent contends, on the other hand, that whatever those rates were they are unreasonable in view of the fact, as it contends, that with respect to these two products petitioner acted only as a manager and not as a manufacturer and that the negotiated rates are premised upon the proposition that petitioner was to bear the same risks as one who finances himself in these respects. Petitioner's rate of profit on the B–47 contract was 7½ percent of allowable costs. On the C–97/KC–97 contract it was 9 percent of such costs with respect to deliveries under contract 9825 and 8 percent under contract 14764. Inasmuch as these rates are roughly in the same range with rates for products produced and services rendered in facilities wholly owned by petitioner, we are unable to agree with petitioner's contention. In this connection we note also that the negotiated rates compare favorably, so far as this record is concerned, with other airframe manufacturers' rates of profit where, so far as is shown here, such other manufacturers have furnished their own production facilities. It follows, we think, that petitioner's rates of profit on the B–47 and KC–97 contracts were to some extent unreasonably high and clearly so when applied to estimated as distinguished from actual cost of production.

It is with respect to the application of subsection 103(e)(6) that it most strongly appears petitioner's 1952 profits of over $56 million are to an extent unreasonable.

Eighty and eight-tenths percent of the profit here under consideration was derived from performance under what are here termed incentive contracts. Such contracts are based upon estimated cost of production. They are exemplified by contract 21407 whereunder petitioner received a fixed and unchangeable percentage fee applied to a firm target cost negotiated and agreed to subsequent to the delivery of the 100th B–47 and 20 percent of the difference between the firm target cost and actual costs as negotiated and agreed upon at the termination of the B–47 contracts, but only in case actual cost underran the target cost. In case petitioner had overrun the target cost its profit would have been 8 percent of target cost less 20 percent of such overrun. Should the overrun have exceeded the target cost by 125 percent, petitioner was required to pay all costs above that percentage and in case the overrun exceeded about 121 percent, petitioner would have ceased realizing a profit. Such contracts had been put in use in Air Force procurement in order that an incentive for the lowering of production costs be made available to contractors. Contracts 21407 for the production of B–47's and 14764 for the production of KC–97's, together with the other incentive contracts under which petitioner received renegotiable profits in 1952, did not carry out the purpose of tending to lower production costs.

Boeing in 1951 was an inadequately financed and equipped airframe manufacturer as compared to its aggregate obligations under incentive contracts then in force and contracts which were of that type executed in 1952. It is reasonable to conclude from this record that this condition was one of the prime factors leading to the use of such

contracts in this instance. Boeing was the designer of and had the only production known-how with respect to B–47's, the refueling equipment of KC–97's, and B–52's. The Air Force, due to what it considered to be an imminent threat of attack upon the United States, required the manufacture and delivery of B–47's as rapidly as possible. It was therefore essential that Boeing be maintained in a healthy financial condition and that no time or effort should be lost in its self-financing. To that end, some basis for such financing was sought and weekly progress payments based upon actual costs and monthly payments of a portion of Boeing's profit were agreed upon. In order that Boeing might maintain its operating capital position, it was agreed that its basic profit payments would be unalterably fixed at a percentage of the cost of production which it and the Air Force could agree upon prospectively as an estimate, taking into account all known and foreseeable elements of cost. In the instance of the B–47 and B–52, due to their great advance in the art, their manufacture was bound to present unexpected design and production problems, which contingencies constituted an undesirable risk to petitioner's operating cash position, alike undesirable to both parties. These two aspects of the incentive contracts before us were clearly adopted as a substitute for bank financing. That this is true is further demonstrated by the fact that although the Government agreed to take title to work in progress, as payment therefor was made, it was at the same time agreed that petitioner would not thereby be relieved of risk. We view these payments regardless of their labels as in the nature of loans. Actual profits and costs in their entirety could not be and were not, under these contracts, determinable until the contracts had been fully performed in a year subsequent to 1952. This is true because, although by far the greater portion of petitioner's profit was based upon estimated cost, a substantial portion represented by incentive profit could be determined only after agreement upon actual allocable costs at that time. In view of its inadequate financing Boeing literally could not await the completion of these contracts for its profit and remain in business. The B–47 procurement was, when initiated, the largest single procurement ever to that time made by the military services of this country. Both the Air Force and petitioner negotiated the estimated cost thereof in its inception and at the time of the cost-reset in good faith, with highly qualified negotiators, with much past experience in airframe procurement and with full knowledge of all available information on the subject. In setting the rate of profit on the estimated cost, they considered and gave what they considered to be proper credit to the Government for its facilities furnished the petitioner without charge. In connection therewith they considered and gave effect to the relationship of petitioner's net worth to its anticipated profits. They considered and gave effect to the source and amount of petitioner's invested capital. They could not, however, for lack of precedent, foresee and give effect to the problems which arose because of the complexity of design of the B–47 and because of its great growth potentiality. That the latter factors were unknown strengthens our belief that neither party envisaged the progress payments as other than Government financing of petitioner.

Because petitioner's real profit was not determinable until the incentive contracts had been fully performed, it follows that under

those contracts such profits were finally fixed when actual costs were known. Actual cost being determinable when final profits were computed we see no justification for the payment to petitioner of more profit than that which would accrue to it by application of a reasonable percentage profit rate to actual as distinguished from estimated costs. Otherwise, with that rate applied to estimated firm target costs the very purpose of this type of contract is vitiated. With the rate factor so applied it is obvious it will produce profits in direct ratio to the estimated cost, thereby creating a high estimated cost incentive rather than the contrary. Coupled with the 20 percent sharing of underruns of cost, the high estimated cost tendency is enhanced. Only provided the profit rate factor is applied to actual cost and the firm target cost estimate used as a measure for under- or over-runs does the effect of the contract provide any incentive to lessen actual cost. Even so applied, however, such contracts are identical with cost-plus-a-percentage-of-cost contracts in that they contain an obvious incentive to increase actual cost. This is offset only by the necessity to lower actual cost in order for the contractor to share in the underrun on a 20 percent basis. Simple arithmetic demonstrates that the 8 percent profit factor is of more importance dollarwise than the 20 percent factor until cost underruns approach 40 percent at which point the two factors take on equal weight. It is only at this point, which we think is unrealistic, where real incentive to produce at low cost begins to exist under such contracts. There is no such cost underrun here.

In our view, even in the light of petitioner's overall efficiency in the performance of the contracts before us and the favorable consideration, to be given it with respect to the application of the risk, contribution, and character of business factors, its rates are not commensurate with its performance of the B–47 and KC–97 contracts by the use of largely Government-furnished facilities, and the use of those rates in the incentive contracts under which by far its greatest profits were collected constitutes an unconscionable exploitation of the United States in its procurement of military necessities.

After consideration of the record as a whole, we have found as a fact that petitioner's profits for 1952 in the amount of $56,734,119 are unreasonable in the amount of $13 million, which latter amount is to be eliminated.

An order will be entered in accordance herewith.

NORTH AMERICAN AVIATION, INC., PETITIONER, *v.* RENEGOTIATION BOARD, RESPONDENT.

Dockets Nos. 956–R, 980–R. Filed October 25, 1962.

The amounts of petitioner's excessive profits on renegotiable contracts in 1953 and 1954, determined.

Charles Pickett, Esq., Melvin D. Goodman, Esq., and *James C. Foley, Esq.*, for the petitioner.

James H. Prentice, Esq., William H. Arkin, Esq., William E. Nelson, Esq., and *Harland F. Leathers, Esq.*, for the respondent.

MULRONEY, *Judge:* Respondent issued its unilateral order determining that for the fiscal years 1953 and 1954, ended September 30, petitioner received excessive profits on its renegotiable business in the

amounts of $6 million and $14 million, respectively. By an amendment to its answer respondent now claims excessive profits for 1953 in the sum of $16 million and for 1954 in the sum of $21,500,000.

The evidence was heard by a commissioner of the Court, and his report, with such amendments as we deem appropriate, after consideration of the objections thereto submitted by the parties, is adopted as the basis of our findings of fact.

Much of the voluminous evidence is contained in a stipulation of facts.

FINDINGS OF FACT

The stipulation of facts is incorporated herein by this reference.

Petitioner is a Delaware corporation organized December 6, 1928. Its principal office is at Los Angeles, California. At the time of incorporation petitioner had a paid-in capital of $25 million, for which 2 million shares of no par value stock were issued. It later issued additional shares of stock for the shares or assets of other companies and changed the par value of its stock to $1 per share.

Petitioner began its operations as a manufacturer of airplanes in 1935. Prior to that time it held stock in several other companies engaged in the aviation and allied industries but did no manufacturing of its own. Beginning in 1935 it operated a small airplane manufacturing plant located at Dundalk, Maryland, and was also engaged in air transportation.

After winning a competitive Air Force award for a new trainer plane in 1935, petitioner built the first unit of its present Los Angeles plant on a leased tract of land which is now known as Los Angeles International Airport. It began manufacturing operations there early in 1936. It then had a book net worth of $5,878,000. It had 432 employees in March 1936.

During the 1936–1941 period, petitioner's operations steadily expanded. Its floor space was increased from 169,786 square feet on December 31, 1936, to 807,272 square feet on December 31, 1940. The number and types of airplanes completed and delivered by petitioner over the calendar years 1936 to 1940, inclusive, and for the first 9 months of 1941,[1] were as follows:

	1936	1937	1938	1939	1940	1941 (9 Mos.)
Trainers	82	212	323	655	963	1,614
Fighters				7	236	5
Bombers and reconnaissance				2		92
Observation and liaison			77	129	32	
Total	82	212	400	793	1,231	1,711

The advent of World War II greatly increased petitioner's orders for airplanes, particularly those of a military type. The following number and types of planes were manufactured by petitioner and delivered during the years 1942 to 1945, inclusive:

[1] In 1941 petitioner changed its accounting period from a calendar year to a fiscal year beginning October 1 and ending September 30. References hereinafter to petitioner's accounting periods will relate to such fiscal years, unless otherwise indicated.

	1942	1943	1944	1945
Trainers	3,135	4,624	2,986	2,149
Fighters	764	799	5,645	7,651
Bombers and reconnaissance	1,100	3,210	4,463	2,412
Total	5,009	8,633	13,094	12,212

The aircraft which petitioner manufactured during the 1936–1945 period consisted principally of models of the AT–6 series of advanced trainers, the P–51 Mustang fighters, and the B–25 Mitchell series of medium bombers. The AT–6 trainers were used by the United States and most other Allied countries during World War II. The Mustang fighters were designed and produced originally for Great Britain, but were later produced in quantity for the United States. They attained considerable success in combat and were highly regarded by World War II pilots. The B–25 bombers were used principally in the South Pacific. They were used in the first air raid on Tokyo in 1942. In addition to airplanes of its own design, petitioner also manufactured B–24 bombers designed by Convair and C–82 bombers designed by Fairchild. Some of the airplanes manufactured by petitioner during the World War II period were built at its Los Angeles plant and some at Government-owned plants located at Grand Prairie, Texas, and Kansas City, Kansas.

At the end of World War II, almost all of petitioner's Government contracts for military airplanes were canceled. Petitioner then ceased operations at Government-owned plants and greatly curtailed its other operations. It built and delivered 143 military planes in 1946, 89 in 1947, 226 in 1948, and 335 in 1949. The number of its employees, which had reached a high of over 87,500 in 1944, dropped to 5,266 by the end of March 1946. Petitioner undertook the manufacture of a small commercial plane known as the Navion but this venture proved unsuccessful. It built a total of 1,002 of the Navion airplanes in 1947 and suffered a loss thereon of about $11 million.

Petitioner's net sales, cost and expenses, and net profits, before any taxes on income, for the years 1946 to 1949, inclusive, were as follows:

	Net sales	Cost and expenses	Profits (or loss)
1946	$52,743,000	$49,449,000	$3,650,000
1947	19,855,000	32,237,000	(11,728,000)
1948	94,130,000	83,643,000	10,811,000
1949	124,180,000	112,678,000	12,056,000

As early as 1945 petitioner began to investigate the field of missiles. In 1946 it obtained a Government contrast to produce a supersonic missile with a range of 175 to 500 miles. The requirements for this missile were later increased and eventually it became the Navaho cruise-type, intercontinental missile. Petitioner was doing work on the Navaho missile during the years 1953 and 1954. Also, during World War II, petitioner began designing and building jet-powered airplanes. All of the planes produced by petitioner during World War II were piston-driven. The jet-powered designs included the B–45, the first United States jet bomber, the FJ–1, the first United States Navy jet fighter, and the F–86, the first of petitioner's series of Air

Force Sabre jet fighters. Petitioner had an order for a small number of FJ–1's at the close of World War II.

The missiles on which petitioner had begun experimental work for the Government about 1945 required a large rocket-powered engine. There were no rocket engines of that type being manufactured in this country at that time. In 1946 petitioner began the development of such an engine, using German V–2 rocket engine as a basic design. Also, in 1946 petitioner began work on a missile-guidance system. In 1947 petitioner made an initial investment in a rocket-engine testing range located in the Santa Susana Mountains, north of Los Angeles. The work on the rocket engines and guidance systems was continued and became an important phase of petitioner's operations in 1953 and 1954, and later years. Petitioner's total investment in the Santa Susana testing facilities at the end of 1954 amounted to about $3,500,000. The Government's investment was about twice that amount. The testing range is still in use and has greatly expanded since 1954.

Petitioner's rocket engines have been used in guided missiles and in most of the Government's successful satellite launchings. Petitioner produced and delivered 6 rocket engines in 1953 and 13 in 1954. It was the sole producer of large rocket engines in the United States in those years. Also, in 1953 and 1954 petitioner delivered seven X–10 test missiles and built its first research atomic reactor.

Also, about 1946, petitioner began an investigation for the Air Force of the use of atomic power for the propulsion of airplanes and missiles. After about a year's work petitioner found that it was not feasible, and so advised the Air Force. However, on its own initiative, petitioner continued its study of atomic energy for peacetime uses and in 1948 received a contract from the Atomic Energy Commission to conduct research in that field. Work on that contract has continued up to the present time. Also, after World War II, petitioner continued its development work on military airplanes, particularly its F–86 Sabre jet fighters.

The hostilities in Korea began June 25, 1950. Shortly thereafter petitioner began to receive large Government orders for aircraft, mostly of military types. To fulfill these orders, it had to increase its floor space and facilities. At that time there was a large, partially idle Government-owned airplane plant at Columbus, Ohio, containing about 2,500,000 square feet of floor space. The plant had been built by the Government during World War II and had been used by Curtiss-Wright for the manufacture of Navy fighters. Curtiss-Wright had continued to occupy about one-half of the floor space. Another firm had used the other half for a period, manufacturing prefabricated houses, but it had ceased operations early in 1950. The Government decided in September 1950 to reactivate the Columbus plant and turn it all over to the petitioner. The space that had been occupied by Curtiss-Wright was turned over to petitioner in December 1950, and the balance in April 1951.

The Columbus plant was a well constructed plant but it required considerable remodeling and modernization of equipment. This work was done by the petitioner, largely at the Government's expense. It extended over several years, and put a heavy burden on petitioner's engineers and skilled workers.

In its operations at the Columbus plant, petitioner had to employ and train a large number of employees and establish new sources of supplies. There were from 1,500 to 1,800 Curtiss-Wright employees at the plant at the end of 1950 when petitioner took it over. These were retained by petitioner. A year later, there were over 10,000 employees. At the beginning of 1953, there were 15,204 employees and at about the middle of that year a peak of over 18,000. Petitioner had to transfer a number of its key employees from its Los Angeles plant from time to time to help organize the Columbus plant and train the new employees.

At first the Columbus plant was used only for assembling airplanes under a system of transferrals from other plants. Later, and during 1953 and 1954, it was used for manufacturing several different models of airplanes and for modifying others.

Also, during 1953 and 1954, petitioner operated major plants at Downey and Fresno, California, and during one or both of those years maintained offices at New York; Dayton, Ohio; McClellan, California; and Washington, D.C. It also operated 27 supporting installations such as small manufacturing plants, test facilities, training schools, and warehouses, 17 of which were located at different points in Los Angeles County, California, and others at Fresno, Edwards Air Force Base, Palmdale, and Santa Susana, California; Cleveland, Columbus, and Washington Courthouse, Ohio; Detroit, Michigan; Patrick Air Force Base, Florida; and White Sands, New Mexico.

The areas of floor space in use by petitioner, at the end of 1953 and 1954 in square feet, and their location, were as follows:

Location	1953	1954
Los Angeles	2,866,220	2,877,619
Downey	1,055,453	1,120,675
Fresno	312,887	340,419
Columbus	3,084,801	3,246,124
Others	1,329,185	1,613,033
Total	8,648,546	9,197,870

Some of this floor space was owned by petitioner, some was leased from the Government, and some leased from others, as follows:

	Owned by petitioner	Leased from lessors other than Government	Owned by Government	Total
1953	2,838,291	1,815,566	3,994,689	8,648,546
1954	2,879,426	1,891,462	4,426,982	9,197,870

Most of the floor space at Los Angeles was owned by petitioner while that at Downey and Columbus was owned by the Government. Most of the other floor space, at Fresno and other locations, was leased from private owners. Except for negligible amounts petitioner did not pay rent for the floor space leased from the Government.

The plant which petitioner occupied at Downey, California, had been built by another airplane manufacturer and during World War II had been expanded by the Government. It was owned in part by the Government and in part by petitioner until September 1953 when, in a transaction between petitioner and the Government involving

other properties, it became wholly Government owned. The plant was used by petitioner both in the manufacture of airplanes and for work on the Navaho missile and related programs.

The following table shows the different types and number of airplanes of each type manufactured by petitioner and delivered during 1950–1952 period:

	1950	1951	1952
Trainers	103	321	360
Fighters	309	169	402
Bombers and reconnaissance	94	29	19
Total	506	519	781

The original cost to the petitioner and to the Government of the property owned by each, and in use by petitioner on September 30, 1952, 1953, and 1954, according to the best information of the parties, was as follows:

NORTH AMERICAN PROPERTY IN USE AS OF SEPT. 30, 1952, 1953, AND 1954

	Sept. 30—		
	1952	1953	1954
Land and land improvements: Los Angeles	$1,104,652	$1,049,055	$2,527,497
Buildings (including building equipment): Los Angeles	9,848,627	9,529,131	10,056,788
Leasehold improvements:			
Los Angeles	2,103,151	2,534,778	1,991,515
Fresno		279,224	364,190
Total	2,103,151	2,814,002	2,355,705
Total land and land improvements, buildings, and leasehold improvements	13,056,430	13,392,188	14,939,990
Furniture and fixtures, tools, and machinery and equipment:			
Los Angeles	10,906,734	13,050,769	14,241,053
Columbus	1,561,141	1,444,435	985,835
Fresno		539,978	719,766
Total	12,467,875	15,035,182	15,946,654
1/6 interest in cooperative wind tunnel at California Institute of Technology	521,569	538,344	542,412
Total property in use	26,045,874	28,965,714	31,429,056

NOTES

1. Data above exclude construction in progress.
2. Included under Los Angeles are both the Los Angeles and Downey plants and their supporting installations. At Sept. 30, 1952, Los Angeles also includes the Fresno plant and its supporting installation.

GOVERNMENT-OWNED PROPERTY IN USE AS OF SEPT. 30, 1952, 1953, AND 1954

	Sept. 30—		
	1952	1953	1954
Land and land improvements:			
Los Angeles		$52,218	$93,495
Columbus		65,165	133,560
Total		117,383	227,055
Buildings (including building equipment):			
Los Angeles (note 1)	$4,655,676	7,028,079	8,854,394
Columbus	9,176,374	19,685,255	29,901,731
Total	13,832,050	26,713,334	38,756,125
Total land and land improvements, and buildings	13,832,050	26,830,717	38,983,180
Furniture and fixtures, tools, and machinery and equipment:			
Los Angeles	6,774,324	13,773,765	20,291,349
Columbus	12,724,449	20,282,837	25,931,763
Fresno		14,432	16,077
Total	19,498,773	34,071,034	46,239,189
Total property in use	33,330,823	60,901,751	85,222,309

Notes.—

1. Each year includes $4,350,000 of Downey plant facilities for which no segregation between land, buildings, furniture and fixtures, tools, and machinery and equipment is available.
2. Included under Los Angeles are both the Los Angeles and Downey plants and their supporting installations. At Sept. 30, 1952, machinery and equipment in use at the Fresno plant is included under Los Angeles.
3. Amounts at Sept. 30, 1954, do not include facilities in use, for which cost information is not available, at the following locations:

McClellan Air Force Base, Calif.—approximately 800 square feet of office space.
Huntsville, Ala.—approximately 240 square feet of office space.
White Sands, N. Mex.—approximately 6,000 square feet of rocket engine test area and office space.
Patrick Air Force Base, Fla.—approximately 17,600 square feet of hangar space.
Palmdale, Calif.—airport facilities under joint-use with three other aircraft manufacturers.

The types and the number of different models of airplanes built by petitioner and delivered to the Government, in each of the years 1953 and 1954, were as follows:

	1953	1954	Total, 1953–54
Fighters:			
F–86D	726	954	1,680
F–86F	1,235	578	1,813
F–86H	2	36	38
F–100A	2	48	50
FJ–2	9	192	201
FJ–3	0	44	44
Total fighters	1,974	1,852	3,826
Trainers:			
T–28A	362	49	411
T–28B	0	206	206
Total trainers	362	255	617
Bombers and reconnaissance:			
AJ–2P	8	15	23
AJ–2	30	25	55
Total bombers and reconnaissance	38	40	78
Total aircraft	2,374	2,147	4,521

The Model F–86D was a later, improved model of F–86A, which was the first production model of petitioner's F–86 Sabre jet series. The F–86 was first flown in 1947. It was designed as a straight-wing airplane but was later changed, in the F–86A production model, to a swept-wing design, patterned after the German Messerschmidt 262. Some of the other features of the F–86A and other models of the series were wing slats, hydraulic boosters for pilot controls, and electrically powered adjusters for the horizontal stabilizers. The F–86A was designed for a subsonic speed of over 600 miles per hour but in power dives attained a speed in excess of sound (approximately 750 miles per hour). It was the first tactical aircraft ever to attain such speed. It broke the world's speed record in a straight-away course in September 1948, with a speed of over 670 miles per hour, and held that record for 4 years, until it was broken by a later model of the series, the F–86D.

The F–86F was a single place jet-powered fighter-bomber. The designing of this model was begun about May 1950, and was substantially completed in August 1951. It was used in the Korean fighting where it established a decided superiority over the Russian built MIG 15. Its "kill ratio" over the MIG 15 was 16 to 1. The F–86F's and F–86D's accounted for the major portion of petitioner's renegotiable business in 1953 and 1954.

The F–86H was an improved model of the F–86F fighter-bomber. It was not produced in quantity in 1953 or 1954. It was intended more as an insurance against possible delay in the production of the supersonic F–100A.

Petitioner began the designing work on the F–100A in January 1951. It was designed for a newly developed, more powerful jet engine, the J–57, made by Pratt & Whitney. The Government had expended $100 million in the development of this engine. The basic design of the F–100A was essentially completed by the end of January 1953. It incorporated some of the features of the F–86 series and also many advanced features. The first F–100A was delivered to the Government in June 1953. A few months later it set a new world's speed record which stood until August 1955. It was superior in performance to any airplane previously built. The development of the F–100A was a major step in aviation.

The FJ–2 was an adaptation of the F–86 series built for the Navy. The basic design was completed about February 1952. An improved model, thet FJ–3, followed. The later model embodied a British designed engine with 25-percent more thrust than the FJ–2 engine.

The T–28A and the T–28B models were both trainers produced for the Air Force and the Navy, respectively. They were two-place planes powered by piston-driven motors. They were used for a number of years by the United States and other countries.

The AJ–2P was a Navy photo-reconnaissance plane, and the AJ–2 a Navy long-range attack plane. They were both large, heavy planes with two piston-driven engines, and a jet engine for added power when needed. The AJ–2 was the only carrier-based plane capable of delivering an atomic bomb at long range. By use of a removable tanker package devised by petitioner it was quickly convertible into a tanker.

In addition to the 10 models described above, petitioner during 1953 and 1954 was doing work on 4 other airplane models which were not delivered until later years. Petitioner was also working on guided missiles, rocket engines, electronics, and electro-mechanical equipment and atomic energy facilities.

The F–86A, F–86F, and F–86E airplanes were all used in the Korean fighting and contributed in a large measure to the air supremacy of the United Nations' Air Forces.

In 1954, petitioner's past president and then chairman of the board of directors, James H. Kindelberger, was given the Exceptional Service Award of the United States Air Force, and the Collier Trophy for 1953. The citation for the Air Force Award stated that:

JAMES HOWARD KINDELBERGER distinguished himself by rendering exceptional service to the United States Air Force and his country for forty years as an engineer, designer, and producer of military aircraft. His name is synonymous with air power. As one of the small band of American pioneers who has fought for the development of air power through the years, his accomplishments stand out in military aviation progress from the Jenny to the Jet. He has no peer as a designer and producer of air frames for fighter aircraft. By applying scientific manufacturing techniques, he revolutionized the aviation industry. His ability to translate the most exacting requirements of the USAF into mass-produced, yet precision operated aircraft was particularly reflected in the combat performances of the F–51, Mustang fighter, and the B–25 Mitchell attack bomber, among the best airplanes produced in their respective classes during the last war. More recently, the North American F–86 Sabrejet has distinguished itself in Korea as the principal United Nations' plane to accept and throw back the challenge offered by the MIG–15 to our air superiority over the battlefield. Our country is indebted to Mr. Kindelberger for his outstanding contribution to the development of the United States Air Force from its modest beginning to its present role of this nation's first line of defense.

The Collier Trophy, which was presented by the then President of the United States, was awarded "for development of the first Supersonic Fighter Airplane in service in the United States Air Force, the North American Land Based F–100 Super Sabre." This award is presented annually by the National Aeronautic Association "for the greatest achievement in aviation in America, the value of which has been thoroughly demonstrated by actual use during the preceding year."

Petitioner's adjusted renegotiable sales, costs and expenses (exclusive of income taxes), and profits (before income taxes) in its Los Angeles and Columbus divisions, were as follows:

	Los Angeles		Columbus	
	1953	1954	1953	1954
Sales	$432,857,566	$397,842,517	$185,199,111	$251,093 450
Costs and expenses	400,121,567	366,879,904	173,446,194	230,616,628
Profits	32,735,999	33,963,423	11,752,917	20,476,822

Petitioner's 1953 and 1954 sales and profits, before any taxes on income, by type of contract, on both renegotiable and non-renegotiable business, were as follows:

Renegotiable business	Fiscal year 1953			Fiscal year 1954		
	Sales	Costs and expenses	Profit (loss)	Sales	Costs and expenses	Profit (loss)
Contract category:						
Cost-plus-a-fixed fee	$67,749,903	$64,560,212	$3,189,691	$88,474,116	$85,182,367	$3,291,749
Incentive-type	503,416,337	462,707,668	40,708,669	541,329,004	490,384,638	50,944,366
Price redetermination	4,262,819	4,070,571	192,248	6,359,466	6,020,458	339,008
Fixed price	8,556,398	8,354,543	201,855	6,664,228	6,119,874	544,354
No-fee facilities	17,874,789	18,023,390	(148,601)	14,186,111	14,282,573	(96,462)
Terminated	19,525,960	19,092,679	433,281	1,248,328	1,201,974	46,354
Total renegotiable business	621,386,206	576,809,063	41,577,143	658,261,253	603,191,884	55,069,369
Non-renegotiable business	7,308,583	5,624,764	1,683,819	2,870,050	274,599	2,595,451
Total business	628,694,789	582,433,827	46,260,962	661,131,303	603,466,483	57,664,820

Petitioner's "Cost-Plus-A-Fixed-Fee" contracts in 1953 and 1954 were, for the most part, contracts for research and development in the fields of rocket engines, guided missiles, guiding systems, nuclear research, and modifying and rebuilding airplanes.

More than 80 percent of petitioner's renegotiable busines in 1953 and 1954 was derived from so-called "incentive contracts." In general, under this type of contract, the Government and the contractor negotiated a price for a specified airplane, based on estimated average cost per plane, plus a profit, in the Air Force contracts, usually of about 8 percent of estimated costs. This was known as the "initial target price." After a certain number of planes had been built and delivered at the initial target price there was a negotiation of a second target price, known as a "firm target price." This was derived from the actual costs incurred and the estimated costs to complete, plus profits. The actual costs were determined, or estimated as to any unknown costs, after delivery of the last airplane under the contract. If actual costs were less than firm target price the contractor received 25 percent of such "under-run," and the Government 75 percent. If actual costs were greater than firm target price the contractor bore 25 percent of the "over-run" burden and the Government 75 percent. The contractor's profits, however, could not exceed 15 percent of estimated costs and the burden of all overruns above 125 percent of firm target costs was borne by the contractor.

One of the principal incentive contracts under which petitioner built F86–D's in 1953 and 1954 was AF 33 (600) 6202 dated May 21, 1952 (the initial tentative target) for 707 units at $112,678 per unit. There was a revised tentative target contracted January 27, 1953, for 901 units at $114,471 per unit. A firm target price of $143,156 per unit was negotiated February 9–12, 1954 (contract date April 29, 1954). The final cost was negotiated January 30, 1956 (contract dated March 12, 1956), at $120,228 or $22,928 per unit under firm target. For 1953 the sales under this contract were $13,457, the costs $12,140, and the profits, before income taxes, $1,308. For 1954 the sales were $123,327,866, the costs $108,792,599, and the profits $14,535,267. Over the entire life of the contract, 1953–1956, the sales were $150,871,098, costs $133,092,191, and profits $17,788,907.

The firm target price was arrived at by negotiations in which both the contractor and the Government were represented. Some of these negotiations lasted several days. The intervals between initial target and firm target were from less than a year to more than 3 years. The

firm target price, usually, but not always, exceeded the initial target price. The final cost, that is, the average per unit cost over the entire contract, usually, was less than the firm target average per unit price. The fact that the contractor was to have the right to use Government facilities free of cost in the performance of some of its contracts was taken into account by the negotiators when the contracts were negotiated. Some or all of these contracts provided for an adjustment in the contract price if the Government should withdraw this right.

The "Price Redetermination" contracts were principally for modifying and rebuilding airplanes, for spare parts, and for designing and engineering studies. The "Fixed Price" contracts were primarily for the manufacture of spare parts for airplanes. The "No Fee Facilities" contracts were for the construction or acquisition by petitioner, at Government cost, of facilities to be owned by the Government and used by petitioner in performance of Government contracts. "Terminated" contracts were the contracts that were wholly or partially terminated during 1953 and 1954. Under these contracts, petitioner was permitted to recover all reimbursable costs, but not all actual costs, and, in some instances, profits as well.

The following schedule shows petitioner's 1953–1954 renegotiable sales, costs, and expenses, and profits, before State and Federal income taxes, on each of the airplane models delivered during those years, as well as on the remanufacture, modification, and repair of aircraft, and on spare parts, under incentive contracts:

Contract and aircraft model or description	Fiscal 1953			Fiscal 1954		
	Sales	Costs and expenses	Profit (loss)	Sales	Costs and expenses	Profit (loss)
T-28A	$25,307,584	$23,764,918	$1,542,666	$9,969,078	$9,233,315	$735,763
T-28B				19,396,275	17,603,249	1,793,026
F-86A	18,569	15,775	2,794	4,186		4,186
F-86D	182,432,359	164,916,836	17,515,523	165,366,356	146,786,340	18,580,016
F-86E	362,546	345,585	16,961	27,742	24,927	2,815
F-86F	202,663,065	185,900,669	16,762,396	89,713,688	81,216,389	8,497,299
F 86E and F-86F	7,640,780	7,166,722	474,058	670,100	624,108	45,992
F-86H	3,552,815	3,320,383	232,432	27,870,438	25,682,451	2,187,987
F-100A	3,940,443	3,679,690	260,753	42,569,311	39,455,397	3,113,914
AJ-1	1,740,241	1,566,068	174,173	315,651	280,655	34,996
AJ-2P	14,059,436	12,646,982	1,412,454	22,194,772	20,093,417	2,101,355
AJ-2	25,064,987	22,895,720	2,169,267	25,201,663	22,847,907	2,353,756
XFJ-2 and XFJ-2B	1,211,034	1,146,731	64,303	31,687	10,786	20,901
FJ-2	10,722,469	9,824,222	898,247	98,451,869	89,952,858	8,499,011
FJ-3				16,763,359	14,963,660	1,799,699
Total incentive contracts for aircraft	478,716,328	437,190,301	41,526,027	518,546,175	468,775,459	49,770,716
Remanufacture, modification or repair of aircraft, etc	2,737,620	2,766,234	(28,614)	4,011,556	3,721,440	290,113
Spare parts	21,962,389	22,751,133	(788,744)	18,771,276	17,887,739	883,537
Total incentive contracts	503,416,337	462,707,668	40,708,669	541,329,004	490,384,638	50,944,366

Petitioner's different types of non-aircraft renegotiable business, in 1953 and 1954, resulted in sales as follows:

	1953	1954
Guided missiles	$27,071,456	$36,778,103
Rocket engines	10,267,102	14,453,092
Electronics and electromechanical equipment	18,204,335	22,314,479
Atomic energy	6,591,950	6,158,596
Total	62,134,843	79,704,270

Petitioner's book net worth, its net sales, and its percentage return of profits,[2] both on sales and book net worth, at the beginning of each of the years, for the entire 1939–1954 period (the calendar years 1939–

It has been a long-standing custom of the Government to make progress payments to contractors in the airplane industry and in other industries, where construction extends over a long period. Such payments were made to petitioner in 1953 and 1954 at the effective rate of about 70 percent of incurred costs. Legal title to materials and work in progress with respect to such payments vested in the Government. Petitioner also borrowed large sums of money from banks for additional working capital needed in the performance of its contracts. The bank loans amounted to approximately $56,500,000 during most of the 1953–1954 period. Petitioner paid interest on such loans of $1,853,747 in 1953, and $1,790,701 in 1954. These interest payments were not treated as allowable charges against renegotiable contracts, under procurement regulations, but they have been so treated for the purpose of renegotiation.

The aircraft industry is highly variable; both the volume of business and profits may fluctuate widely in response to external forces over which it has no control. This is especially true of the segment of the industry which specializes in military aircraft, as does petitioner. In times of war or national peril it may be pushed to capacity production, and suddenly find its business reduced to skeleton dimensions. Such was petitioner's experience after the close of World War II. The Government usually reserves the right to terminate its contracts at will. There were 23 cancellations by the Government of petitioner's prime contracts in 1953 and 33 in 1954.

For all practical purposes the Government was petitioner's sole customer in 1953 and 1954, and, in fact, during most of the years of petitioner's successful operations. The possibility of the sudden loss of substantially all of its Government business constituted a continuing threat to petitioner's business. Without the Government's contracts petitioner's survival would have been in serious doubt. At best it would have been unable to hold its large organization together, particularly its trained engineers and skilled laborers upon which its operations largely depended.

The following table shows the number of military aircraft procured by the Government in the calendar years 1940 to 1954, inclusive, and the number and percentage of such aircraft manufactured by the petitioner:

[2] Before any taxes on income and before any adjustment on account of special accounting agreement between petitioner and the Government, but after renegotiation, when applicable, prior to 1953.

Year	Procured by Government	Manufactured by petitioner	Percent
1940	6,028	679	11.3
1941	19,445	2,544	13.1
1942	47,675	6,035	12.7
1943	85,433	9,109	10.7
1944	95,272	14,862	15.6
1945	46,865	8,224	17.5
1946	1,417	19	1.3
1947	2,122	100	4.7
1948	2,536	292	11.5
1949	2,592	344	13.3
1950	2,773	545	19.7
1951	5,446	533	9.8
1952	9,302	1,000	10.8
1953	10,626	2,510	23.6
1954	8,740	2,134	24.4

Petitioner, as well as other airplane manufacturers, usually experienced a great many difficulties in producing airplanes that would meet the high standards of perfection set for them by the Government and the severe tests to which they were subjected. None of the airplanes manufactured by the petitioner, or other companies during 1953 and 1954, was free of troubles. Each model had its own engineering problems. These problems multiplied with each step in the advancement of the art. Every substantial increase in speed, especially, and in range, or engine power, or fire power, gave rise to new problems. This was especially true in the approach to the speed of sound. When first subjected to these high speed aircraft of proven design developed aerodynamic deficiencies totally unknown to the engineers and pilots. Many of these deficiencies could be detected only by testing and corrected only by trial and error. Some were latent deficiencies that did not appear until the aircraft had been subjected to actual combat conditions. Aircraft with known deficiencies were sometimes considered combat capable and were used successfully. When defects or deficiencies of sufficient importance were discovered the aircraft were grounded until corrections could be made.

As to the efficiency of operations, quality of products, ability to meet production schedules, and pricing on Government contracts, petitioner has at all times here material stood at or near the top of the aircraft industry. In general, as a builder of military aircraft, petitioner during 1953 and 1954 was not excelled by any other member of the industry and equaled by only a few, if any.

To meet the urgent production demands of the Air Force some models of the F–86 airplane were built at both the Los Angeles and the Columbus plants. Due to lack of production experience and the use of untrained personnel at the Columbus plant, the unit cost of production there was larger than at the Los Angeles plant. The unit costs at both plants were reduced as production increased. The unit cost production of the F–86F decreased at the Los Angeles plant from $120,916 at October 1952, to $92,793 for the period March to June 1954, and at the Columbus plant from $169,572 for the April 1952 to September 1953 period, to $128,821 for the August 1953 to May 1954 period. On a comparative basis, petitioner's production costs of military aircraft in 1953 and 1954 were considerably lower than the average of the aircraft industry, and on the whole were the lowest in the industry.

Petitioner was especially economical in the use of materials and manpower. It developed, or adopted, and utilized in its operations numerous material and labor-saving devices or ideas, such as the "die quench" method used in shaping "machined grid" formed wings, the integrally stiffened construction of airplane wings, the installation

of a system of automatic vacuum collection of salvage scrap, particularly of the high-value aluminum scrap, the purchase of critical materials in template form, the use of the photo-electric cell method of riveting, the organization among its key employees of a revolving conservation committee, and a plant-wide safety program.

The accident rate among petitioner's employees, per million of manhours, was 2.21 percent in 1953 and 1.52 percent in 1954, as against 3.8 percent in 1953 and 3.2 percent in 1954 for the aircraft manufacturing industry as a whole, and 13.4 percent in 1953 and 11.9 percent in 1954 for all manufacturing industries.

Petitioner utilized all of its plant facilities at near full capacity in 1953 and 1954. It operated two full shifts and a skeleton third shift during both of those years.

The following schedule shows petitioner's dividends and the earnings retained in the business for the 9 months ended September 30, 1941, and for each of the fiscal years 1942 to 1954, inclusive:

Year	Dividends	Net income retained
9 months ended Sept. 30, 1941	$2,576,275	$4,249,679
Fiscal year ended Sept. 30:		
1942	4,293,791	4,607,050
1943	3,435,033	8,355,290
1944	3,435,033	10,753,480
1945	4,293,791	3,457,777
1946	6,870,066	[1](4,544,424)
1947		[2](28,259)
1948	1,717,517	4,733,685
1949	3,435,033	3,871,376
Fiscal year ended Sept. 30—Continued		
1950	$4,293,791	$3,792,464
1951	4,293,791	2,127,821
1952	4,293,791	3,527,095
1953	5,152,549	7,620,812
1954	9,446,341	12,733,395
1955	15,457,649	16,891,527
1956	13,224,877	15,536,085
1957	16,030,154	17,834,308
1958	12,824,223	13,962,071

[1] Amount by which dividends exceeded net income for the fiscal year.
[2] Loss for the fiscal year.

The compensation paid or accrued to petitioner's executive officers during 1953 and 1954, including salaries and incentive pay, was as follows:

	1953	1954
J. H. Kindelberger	$187,500	$253,637
J. L. Atwood	141,000	183,007
R. A. Lambeth	69,000	81,843
R. H. Rice	76,000	91,940
J. S. Smithson	69,193	81,843
A. T. Burton	37,708	45,431
C. J. Gallant	51,416	68,618
L. L. Walte	48,639	65,122
S. G. Anspach	31,292	39,198
Total	711,748	910,729

The airplanes manufactured by petitioner in 1953 and 1954 contain thousands of different parts. Some of the major parts such as motors, wheels, and various instruments, were provided by the Government without cost to the petitioner. Other parts were obtained by petitioner from subcontractors. It was the policy of the Government to encourage subcontracting in the airplane industry. Petitioner's subcontracting costs amounted to 25 percent of its total costs in 1953 and 1954.

Petitioner was responsible for designing the aircraft and assembling the various components into a complete workable unit. This was a task of great complexity, requiring many engineering and mechanical skills. Many difficult problems arose which could be solved only by extensive research and experimentation. In resolving these problems the Government contributed a vast amount of assistance to the petitioner and other airplane manufacturers. The Air Force maintained an Air Research and Development Center at Wright Field, Dayton, Ohio, and a Flight Test Center at Edwards Air Force Base, California. The Navy maintained the Naval Air Test Center at Patuxent, Maryland; and there were other various Government facilities at other locations. These facilities and the results of the Government's various tests and experiments were available to petitioner and other aircraft manufacturers in the performance of Government contracts. Government engineers and technical advisers were regularly stationed at petitioner's plants in 1953 and 1954.

This is a proceeding under the Renegotiation Act of 1951 (50 U.S.C. App. sec. 1218) hereinafter sometimes referred to as the Act, for a redetermination of the amount of excessive profits, if any, received or accrued by petitioner for the years 1953 and 1954 on its renegotiable business. The Renegotiation Board determined that petitioner realized excessive profits of $6 million in 1953 and $14 million in 1954. The statute giving this Court jurisdiction in renegotiation cases (sec. 108 of the Act) provides this Court "may determine as the amount of excessive profits an amount either less than, equal to, or greater than that determined by the Board." The Renegotiation Board now asks us to determine greater amounts of excessive profits than it determined, to-wit: $16 million in 1953 and $21,500,000 in 1954. Petitioner seeks a determination that it realized no excessive profits in either year. The above-cited provision of the Act also provides a proceeding such as this "shall not be treated as a proceeding to review the determination of the Board, but shall be treated as a proceeding de novo."

The Act defines "excessive profits" in section 103(e) as "the portion of the profits derived from contracts with the Departments and subcontracts which is determined in accordance with this title to be excessive." The Act does not provide any measurable objective standards upon which the determination of excessive profits is to be based. It goes on to provide that—

> In determining excessive profits favorable recognition must be given to the efficiency of the contractor or subcontractor, with particular regard to attainment of quantity and quality production, reduction of costs, and economy in the use of materials, facilities, and manpower; and in addition, there shall be taken into consideration the following factors:
>
> (1) Reasonableness of costs and profits, with particular regard to volume of production, normal earnings, and comparison of war and peacetime products;
>
> (2) The net worth, with particular regard to the amount and source of public and private capital employed;
>
> (3) Extent of risk assumed, including the risk incident to reasonable pricing policies;
>
> (4) Nature and extent of contribution to the defense effort, including inventive and developmental contribution and cooperation with the Government and other contractors in supplying technical assistance;
>
> (5) Character of business, including source and nature of materials, complexity of manufacturing technique, character and extent of subcontracting, and rate of turn-over;
>
> (6) Such other factors the consideration of which the public interest and fair and equitable dealing may require, which factors shall be published in the regulations of the Board from time to time as adopted.

We have no problem here with respect to the amount of profits petitioner derived from its renegotiable contracts during each of the years in question. Section 103 of the Act provides: "The term 'profits derived from contracts * * *' means the excess of the amount received or accrued under such contracts * * * over the costs paid or incurred with respect thereto and determined to be allocable thereto." We have stipulated figures of actual costs and payments showing petitioner's profits from renegotiable contracts, which comprise over 90 percent of its entire profits, amounted to approximately $44,577,000 in 1953 and $55,069,369 in 1954. These contracts, for the most part, were for the production of military airplanes for the United States Air Force and the Navy. The airplanes included trainers, fighters, and bombers, but were predominately fighters. They were produced in large numbers, 1,974 in 1953 and 1,852 in 1954. Non-aircraft renegotiable business accounted for a small part of petitioner's renegotiable business in the years in question. These were contracts relating to guided missiles, rocket engines, electronics, and atomic energy.

There were in all some 31 contracts from which petitioner realized renegotiable profits during the years in question. Our determination as to excessive profits is not to be made with respect to amounts received or accrued under separate contracts in each year. The Act provides that the determination as to excessive profits must be made with respect to the aggregate amounts received or accrued each year under all renegotiable contracts unless there is mutual consent for separate contract renegotiation proceedings. Sec. 105(a);[3] cf. *Warner* v. *War Contracts Price Adjust. Board*, 14 T.C. 1320, and *United States* v. *Warsaw Elevator Co.*, 213 F. 2d 517. This means all of petitioner's receipts or accruals of contract payments and all of its costs and profit figures on all of its business subject to the Act are lumped together so far as they are attributable to each year involved. It is obvious this permits excessive profits from one contract to be offset by deficient profits or losses from another.

As stated above, we have stipulated figures of aggregate actual costs and aggregate profits realized by petitioner on the aggregate of its renegotiable business for each year involved. Our task is to determine on all of the facts, after consideration of the statutory factors how much, if any, of the profits realized by petitioner are excessive.

It is to be noted that in naming the factors to be considered in renegotiation the Act places special emphasis on the efficiency of the contractor, saying that it "must be" given favorable consideration "with particular regard to attainment of quantity and quality production, reduction of costs, and economy in the use of materials, facilities, and manpower * * *." Respondent takes the position that petitioner attained, at best, no more than average efficiency in its operations and is not entitled to favorable consideration under this factor.

---

[3] SEC. 105. RENEGOTIATION PROCEEDINGS.

(a) PROCEEDINGS BEFORE THE BOARD.—* * * The Board shall exercise its powers with respect to the aggregate of the amounts received or accrued during the fiscal year (or such other period as may be fixed by mutual agreement) by a contractor or subcontractor under contracts with the Departments and subcontracts, and not separately with respect to amounts received or accrued under separate contracts with the Departments or subcontracts, except that the Board may exercise such powers separately with respect to amounts received or accrued by the contractor or subcontractor under any one or more separate contracts with the Departments or subcontracts at the request of the contractor or subcontractor. * * *

Respondent argues that in the performance of most of its major contracts petitioner was inefficient in its operations; that the quality of its products was deficient; that it failed to reduce costs and was not economical in the use of materials, facilities, and manpower.

The evidence of record is overwhelmingly to the contrary. It shows that in each of these categories petitioner was at or near the top of the aircraft industry. Colonel Gerald F. Keeling, who, during 1953 and 1954, served respectively as technical adviser to the chief of procurement division of the Air Materiel Command and as deputy director of procurement and production of the American Air Force, when asked about North American's efficiency as a producer of airplanes in 1953 and 1954, testified that "North American's efficiency, both as to cost to produce and initial technical design far surpassed any other manufacturer." Lt. Gen. Clarence S. Irvine, who, during 1953 and 1954, was deputy commander for production of the Air Materiel Command, testified that as a producer of airplanes North American was the best—"From a standpoint of excellence in manufacturing procedures I would say they are within the top two or three. * * * I would say that there was not other airplane company better and few as good on an over-all standpoint." Lt. Gen. Lawrence C. Craigie, Deputy Chief of Staff of the Air Force, testified in 1953 and 1954 he rated petitioner "extremely high" as a producer of aircraft in this period and at "the very top group" of aircraft companies. An indication of the high regard in which petitioner was held by the Defense Department is found in the fact that its aircraft accounted for about 24 percent of all military airplanes and about 50 percent of all fighter type airplanes procured by the Government during the years in question.

Respondent contends that the airplanes built by petitioner, particularly Models F–86D and F–86F, which were produced in large quantities, the F–100, and some of the other Air Force and Navy models, were of inferior quality. The evidence as a whole refutes this contention. Petitioner's F–86 series pioneered in the field of modern fighter aircraft. They were used extensively in the Korean conflict with outstanding success and contributed largely to the air supremacy of the United Nations forces. The victory ratio of the F–86's over the Russian built MIG–15's was over 10 to 1. The F–86D was a single-place interceptor and the F–86F a fighter-bomber. They were both ordered in large numbers in 1953 and 1954 and were the backbone of the United States Air Defense for several years thereafter. The F–100 was the first operational airplane to exceed the speed of sound in level flight. Its advent is considered a milestone in the development of aviation. The FJ–2's and FJ–3's were rated as the best Navy fighters of their time. All of these airplanes admittedly fell short of perfection—and all of the witnesses agreed that no perfect airplane has ever been built—but they were the best of their types produced up to that time. Some of them were advanced models and embodied many new features and presented many new and difficult engineering problems. Frequent changes had to be made in each model to keep abreast of the rapid advancement of the art. As production continued petitioner's and the Government's engineers and scientists worked together constantly and under great stress to detect and correct the deficiencies and improve the performance capabilities of each model. We are satisfied that petitioner fully cooperated in these efforts and

that it showed commendable diligence and resourcefulness in improving the quality and performance of its airplanes.

Respondent cites petitioner's failure to meet the production goals on some of its contracts as grounds for denying petitioner favorable consideration for efficiency in its operations. While it is true that many of the production schedules specified in the contracts were not met, it was not always the fault of the petitioner. The failure was due to numerous causes, such as structural modifications required by the Government, delays in delivery of engines or other essential components furnished by the Government and subcontractors, and other causes, some of which were not under petitioner's control. There is evidence, too, that the production schedules were known to be unrealistic and would require revision. The evidence does not show any serious delays in production occasioned by petitioner's lack of diligence or capability.

In our opinion, the evidence as a whole leaves no doubt that in 1953 and 1954 the petitioner maintained a high degree of efficiency in the manufacture of airplanes under its major contracts, and, accordingly, we have given petitioner favorable consideration under this factor.

The other statutory factors will be briefly discussed in the order in which they appear in the statute. "(1) Reasonableness of costs and profits, with particular regard to volume of production, normal earnings, and comparison of war and peacetime products."

It is to be observe we are dealing with actual costs and not estimated cost figures with respect to separate contracts that were the subject of negotiation between the contracting parties during the performance years. Here we have stipulated figures of actual costs of all renegotiable business of $576,809,063 in 1953 and $603,191,884 in 1954, and stipulated figures of profits of $44,577,143 in 1953 and $55,069,369 in 1954. As set forth in our findings, petitioner's unit cost of production decreased as production increased and on the whole, petitioner's costs of producing military aircraft were the lowest in the industry. As to the "reasonableness" of petitioner's profits it is enough to say this will be the ruling consideration in this proceeding. We have found that as to volume of production, petitioner utilized all of its plant facilities at near full capacity during 1953 and 1954 and produced nearly a fourth of the military aircraft procured by the Government during the years in question. Consideration of the subfactors of "normal earnings, and comparison of war and peacetime products" is not very illuminating here. As already pointed out, petitioner had no normal peacetime operations outside the field of manufacturing airplanes and other products of military use. "(2) The net worth, with particular regard to the amount and source of public and private capital employed."

Here, as in *Boeing Co.* v. *Renegotiation Board*, 37 T.C. 613, respondent's primary contention is that petitioner's profits are excessive because they constitute an unreasonable return on book net worth. However, in our consideration of this factor we have done what we did in *Boeing*, namely, increased petitioner's net worth figure by the value of its design and manufacturing know-how, which we feel is of the value of all its book assets combined.

We have also considered large amounts of borrowed capital-interest bearing bank loans—not reflected in book net worth averaging $56,500,000 in 1953 and 1954. We have also considered petitioner's use of

leased and Government-furnished facilities. The record shows this is characteristic of the airplane industry where wide fluctuations in volume of business make large investments in facilities impracticable. This also is a cause of high return of income on book net worth. But this fact and the fact that petitioner received high progress payments tend somewhat to reduce the profit that should be allowed to be retained as reasonable in the renegotiation process. "(3) Extent of risk assumed, including the risk incident to reasonable pricing policies."

In our consideration of this factor we feel petitioner assumed no risk. Its pricing policies on which its major contracts were negotiated virtually insulated petitioner from any serious risk from that source. While petitioner did suffer losses on some of its contracts, its overall experience shows that the risks were comparatively inconsequential. "(4) Nature and extent of contribution to the defense effort, including inventive and developmental contribution and cooperation with the Government and other contractors in supplying technical assistance."

Petitioner made varied and extensive contributions to the defense effort, the most important of which, perhaps, was the designing and production of a large number of superior fighter airplanes. Its F–86 fighter, which composed the major portion of its production in 1953 and 1954, was the backbone of the United States Air Force for a number of years. Petitioner's development of the F–100A, the first supersonic airplane, was a major step in aviation.

The evidence is that during 1953 and 1954, as well as in other years, petitioner made notable contributions to the defense effort in the superior quality of its products, its response to the demands for large volume production, its cooperation with the Government and the aircraft industry in solving engineering problems, its economies in the use of materials and manpower, and the development of improved manufacturing techniques. The rocket engine, which petitioner began developing in 1946, served a vital need of the Government in the field of missile development and space exploration.

Respondent would deny petitioner any credit whatsoever for contributions to the defense effort in the production of its airplanes in 1953 and 1954, because it was not performing a vital function. Describing petitioner as a designer of "air frames" rather than "airplanes," respondent continues:

> The distinction intended is not one solely of semantics since the airframe—which the petitioner and its subcontractors fabricated—was merely the envelope enclosing the propelling force and the myriad of equipment which are essential to make an airplane an effective combat instrument. * * *

The truth is that the building of airplanes, or "air frames," is a highly technical and complex operation. From the earliest sustained power flight there has been a more or less steady advance of the state of the art in air-frame design. This has been greatly accelerated at times by wartime and national defense compulsions. With military aircraft, especially, the demand for advancements in design and increased production have been pressing. Each forward step in design has given rise to new engineering problems.

Respondent contends that petitioner was uncooperative with Government representatives and intentionally withheld information or gave misleading information to the Government auditors and renegotiators. This contention is not only contrary to the weight of the

evidence but, again, is inconsistent with respondent's requested findings of fact.

97. Petitioner benefitted [*sic*] by the immense amount of governmental assistance which was transmitted to the aircraft manufacturers. The effect was a team effort where governmental personnel, responsible for the development and production of aircraft, worked very closely with the contractor in providing assistance, exchanging information, participating in the programs and contributing to the progress and satisfactory development of the planes. * * *

Colonel Keeling described petitioner as "extremely cooperative and were willing to step out and fix things quickly." General Irvine testifield that North American always reacted very fast in any way to improve its product; that "I think I can say without question that they had the fastest reaction of any engineering department in the aircraft industry"; and that he had less trouble and less cost to the Government in obtaining satisfactory solution of the inevitable problems with North American than with the other manufacturers. "(5) Character of business, including source and nature of materials, complexity of manufacturing technique, character and extent of subcontracting, and rate of turn-over."

It is well established in the record that the manufacturing of airplanes of the types petitioner furnished, is a complex and difficult business. In its supersonic airplane activities and its rocket engine, missile, and atomic work it was exploring new and advanced fields. In all of its manufacturing activities, including its guidance systems, its production operations necessitated precision work with a flexible manufacturing operation that would allow changes for application of new and improved techniques. Ordinary mass-production methods could not be employed to petitioner's type of manufacturing activities.

Petitioner complied with the Government policy with respect to subcontracting. It subcontracted about 25 percent of its airplane work.

Here the subfactor "rate of turnover" is mentioned. We assume this means inventory turnover. *La Grand Industrial Supply Co.* v. *United States*, 22 T.C. 1023. Consideration of this factor is of limited usefulness because of the nature of petitioner's operation. If we use the gross value of its inventories it had a relatively low inventory turnover: a little more than twice annually. But this does not mean much as petitioner received progress payments equal to about 70 percent of incurred costs and title to inventory items passed to the Government with such progress payments.

This petitioner has always had to rely on Government contracts for its very existence. It had practically no business with private customers. There is some merit to the observation made by respondent that in a sense the petitioner was virtually in partnership with the Government during all of its business life.

On giving consideration to the entire record and all of the facts in the light of the statutory factors, we feel that petitioner's profits on its renegotiable business for each of the years in question were to some extent excessive. It is our conclusion that petitioner realized excessive profits from its renegotiable contracts of $4 million in 1953 and $12,500,000 in 1954.

Reviewed by the Court.

Decisions will be entered accordingly.

WITHEY, J., concurring: Because in my view this case is in principle indistinguishable on its facts from *Boeing Co.* v. *Renegotiation Board*, 37 T.C. 613, and for reasons set forth in *Boeing*, I concur in the result herein.

FACT SHEET

DOD Request

PAGE 195.—Request fact sheet on matter of $4 million in excess profits.

Admiral Rickover's testimony

"I am presently involved in just such a case where the Government is planning to pay about $4 million in excess profit. The matter has been in dispute since 1962. This case is a good example—that, no matter what the circumstances, if a contractor persists long enough he can usually win his case. Let me describe it briefly.

"The case involves several multimillion dollar contracts dating back to 1958. At that time, there was no Truth-in-Negotiations Act. However, on certain procurements for nuclear propulsion components, cost breakdowns were requested so that the Navy could test the reasonableness of price levels established through negotiations.

"In response to these requests for cost breakdowns, a contractor submitted figures that indicated his price included a 10 percent profit.

"About four years later, in 1962, the General Accounting Office found that the contractor made actual profits of about 45 to 65 percent on these orders, and that he knew, or should have known at the time he submitted his cost breakdowns, that he would realize profits substantially higher than the 10 percent he represented to the Government.

"The General Accounting Office considered that the contractor was not entitled to these excessive profits under the circumstances. The Navy and the Department of Defense agreed with the General Accounting Office. In July 1962 the Navy withheld payment to the contractor of about $4 million, to recover the excess profit. In November 1964 the Navy auditor, after an extensive and thorough review, made a formal determination that the $4 million was not reimbursable under the Government's contracts. In January 1965, the contractor appealed the Navy auditor's decision. This appeal was ultimately turned over to the Defense Contract Audit Agency and, in February 1966 the Defense auditor responsible for auditing this contract, issued a preliminary decision substantiating the Navy's prior action in disallowing the $4 million. In June 1967, the contractor made a further appeal of the case to Defense Contract Audit Agency Headquarters.

"Now, in April 1968, the Defense Contract Audit Agency has completed a new audit of these 10-year-old orders. This new audit concluded that the contractor is entitled to be paid the excess profit he obtained, despite his submittal of these breakdowns.

"I cannct understand what caused this reversal. Apparently, the contractor's lawyers came up with a line of reasoning that the Defense auditor has been able to accept as adequate to support the contractor's claim to these excess profits.

"The contractor's lawyer and the Defense auditor now argue that the Navy closely supervised the contractor's operations and was fully

cognizant of the facts concerning these contracts at the time the contracts were let. They argue that because the Navy agreed to the contractor's use of a fixed-price contract instead of a cost-type contract, the Navy, rather than the contractor, was at fault for the higher profits. With respect to the contractor's breakdowns showning a 10-percent profit, they state that the Navy's purpose in requesting these breakdowns 'was not clear' and the breakdowns 'served no real purpose.'

"Apparently, the contractor and the Defense auditor have concluded that a contractor's breakdown doesn't mean anything. Apparently, it is proper to tell the Government 10 percent when you expect to make 45 to 60 percent.

"When a corporation submits a price or cost breakdown to the Government, I believe the corporation and the officials involved should be held responsible for its accuracy. Since the corporation has won the rights as a citizen under law, why, then, shouldn't it and its officials have the corresponding obligations and responsibilities of a citizen? It is one of the glories of Anglo-Saxon jurisprudence that every official is responsible for his acts. It was not the corporation but its officials that gave the Government this information. However, it appears that they will now be excused for their actions."

Additional Facts

This case grew out of GAO Reports B–146733 dated July 23, 1962, B–146760 dated December 26, 1962, and B–146733 dated February 6, 1964. The Navy position is that a contractor is not entitled to unearned profits which resulted from the excessive prices established through submission of false and misleading cost information to the Government. The matter is still under consideration by the Defense Contract Audit Agency.

Copies of NAVSHIPS Memoranda dated April 15, 1968 * * * to the Defense Contract Audit Agency regarding one portion of the case, are attached.

DEPARTMENT OF THE NAVY,
NAVAL SHIP SYSTEMS COMMAND,
Washington, D.C., April 15, 1968.

Memorandum for Defense Contract Audit Agency.

Subj: NAVSHIPS Comments on Defense Contract Audit Agency (DCAA Recommendations on [Contractor Z] Appeal of Navy Disallowances of Excess Profit on Main Coolant Pumps Furnished Under Contracts Nos. 72379, 72401, 72429, and 77026.

Ref: (a) DCAA memorandum for [name omitted] Deputy General Counsel of the Navy dated April 2, 1968; (b) Memorandum from the DCAA Resident Auditor [Contractor Z] Pittsburgh, Pa., to the DCAA Regional Manager, Philadelphia Region, dated February 26, 1968; (c) Memorandum by DCAA Regional Supervisory Auditor, Philadelphia Region for the file dated February 21, 1968.

Encl: (1) Chronology Regarding [Division A] Purchase Orders 56–PR–6502 and 56–PR–6022 with [Division B].

1. References (a) through (c) were received on April 3, 1968, in response to a NAVSHIPS request to review and comment on the DCAA recommendation concerning [Contractor Z] Appeal of Navy

disallowances totaling $2,986,669 of excess profit on main coolant pumps furnished under the subject subcontracts. These subcontracts were awarded in 1958 and the disallowance of excess profit made in 1962. References (b) and (c) recommended that [Contractor Z] be allowed to recover the full $2,986,669 disallowed by the Navy. By reference (a) NAVSHIPS was given 10 days to comment on these DCAA recommendations.

2. The ten days allowed by DCAA is insufficient time for NAVSHIPS to properly analyze and comment on the DCAA recommendations in references (b) and (c). The DCAA recommendations are exactly opposite to conclusions and recommendations arrived at after thorough study almost six years ago by the General Accounting Office, the Navy Auditor, the Bureau of Ships, the Chief of Naval Material, and the Comptroller of the Navy. NAVSHIPS notes that DCAA has spent more than 9 months to prepare its recommendations in references (b) and (c). However, it is understood that DCAA is unwilling to allow NAVSHIPS additional time needed to properly review and adequately prepare our comments. Therefore, this letter provides only a general outline of NAVSHIPS strong disagreement with DCAA recommendations in references (b) and (c).

3. The DCAA recommendations are based on several main conclusions with which NAVSHIPS strongly disagrees.

a. *DCAA concluded that [Division A] actions were intensely supervised by the Navy as an extension of the Navy's own procurement responsibility and knew or should have known in considerable detail precisely the procurement methods and procedures employed by [Div. A.]*

NAVSHIPS comment: NAVSHIPS exercised surveillance of its nuclear reactor plant component contracts with [Contractor Z] through a field office staff of four Naval officers and clerical help. The efforts of the NAVSHIPS office were directed toward general surveillance of the contractor's overall efforts in engineering, procurement, and quality control, and in coordinating the contractor's efforts with other Naval nuclear program activities as, for example, scheduling delivery of material to shipyards. In addition, NAVSHIPS exercised close supervision and control over the contractor's *technical efforts* in the design, development and manufacture of nuclear propulsion plant components and equipment.

NAVSHIPS was generally aware of [Div. A] procurement methods and procedures. However, there was great reliance by the Navy on [Div. A] in the application and use of these procedures to insure reasonable prices to the Government. The NAVSHIPS contracts involved a very large number of subcontracts and the efforts of about 300 [Contractor Z] management and professional employees. It is inconceivable that 4 officers could "intensely supervise" 300 [Contractor Z] management and professional personnel involved in thousands of subcontract actions.

Regardless of degree, NAVSHIPS surveillance of [Div A] was not intended to and did not result in an assumption of [Contractor Z] responsibilities by the Navy.

b. *DCAA concluded that the Navy "dictated" use of firm fixed price contracts to procure equipment, and that it was the use of this type contract rather than any [Contract Z] action, that caused the extraordinary high profit on these contracts.*

NAVSHIPS comment: NAVSHIPS disagress that the Navy " dictated" use of firm fixed price contracts for the procurements in question and disagrees that it was the type of contract rather than any [Contractor Z] action that caused the extraordinary high profits on these contracts. On a number of occasions, [Div A] used price redeterminable and other type contracts with its suppliers, including other divisions of [Contractor Z] where [Div A] or the Navy thought component prices to be too high, whether or not competing bids were obtained. Certainly, redeterminable contracts would have been used in the main coolant pump procurements had the Navy any reason to believe that [Contractor Z] actually expected to realize much higher profits than those represented on the breakdowns they submitted to the Government. Further, the use of fixed price type contracts was recommended by [Contractor Z]

c. *DCAA concluded that the Navy's purpose in requesting cost breakdowns was not clear and that the breakdowns submitted by [Contractor Z] to the Navy "served no real purpose".*

NAVSHIPS comment: The Navy requested cost breakdowns to test the reasonableness of prices established through negotiation by [Div A] Please see the attached chronology, enclosure (1). Had the [Contractor Z] breakdowns shown profits of 21% to 65% that Government auditors subsequently have shown that [Contractor Z] knew, or should have known, would be realized, instead of the 10% profit shown on the breakdowns, the Navy, to protect the interests of the Government, would have taken action to obtain reasonable prices or to require use of a redeterminable or other type contract. With regard to [Div A] practice, at that time, of requesting cost breakdowns after order placement, [Div A] position was that they had no clear right to a cost breakdown from prospective suppliers in advance of the order. However, [Div A] included a requirement for such breakdowns in their purchase orders. This afforded [Div. A] the contractual right to the information required by the Navy after order placement. [Div A] maintained that, in this way, the Navy could still check whether the general level of prices was reasonable in relation to supplier costs, and that adjustments, if necessary, could be made through the leverage of [Div A] future procurement or through termination and renegotiation of the contract price. Moreover, such breakdowns would be relevant in pricing subsequent procurements.

d. *DCAA concluded that if [Contractor Z] had prepared their proposals in accordance with their own procedures their estimates would have reasonably supported the prices they bid.*

NAVSHIPS comment: NAVSHIPS is not in a position to comment on DCAA's contention that a proper cost estimate in compliance with [Contractor Z] procedures in effect at the time of order placement would have shown estimated profits of only 21% rather than the 48% profit estimated by GAO, or the 65% profit estimated by the Navy auditors as atcually having been made on these subcontracts. However, whether the proper cost estimate should have shown a 21% profit or a 65% profit affects only the amount the Government should recover from [Contractor Z]. To establish the actual amount the Government should recover would require a detailed review by persons familiar with the technical cost and production aspects of the order. NAVSHIPS' point is that, even using DCAA's estimate [Contractor Z] knew or should have known, at the time they submitted their break-

downs, that their prices provided for profits substantially higher than the 10% they represented to the Navy in their breakdowns. The Navy, thus misled, consented to procurements to which have otherwise not agreed.

4. It is not apparent from the DCAA recommendations that the official Navy position submitted to the General Accounting Office has been recognized or considered. The DCAA recommendations appear to have omitted consideration of the following points which are the substance of the Navy position:

a. The Navy requested cost breakdowns to find out whether price levels established by [Div A] through their negotiations and procurement procedures were reasonable.

b. [Division B] submitted three so called price breakdowns. These three breakdowns stated that the prices established by [Div A] through negotiation included only a 10% profit. In actual fact [Contractor Z] knew, or in the circumstances should have known, that their prices would result in profits 2 to 6 times larger than [Contractor Z] represented to the Government.

c. The Navy, relying on breakdowns provided by [Contractor Z] was led to believe that main coolant pump prices established by [Div A] and [Div B] were reasonable, and provided for a profit of about 10%.

d. Because [Contractor Z] misrepresented to the Government the amount of profit included in their prices, the Navy accepted prices and consented to orders to which they would not have consented had [Contractor Z] revealed the actual profits they expected from these orders.

e. [Contractor Z] is not entitled to the unearned profits which resulted from the excessively high prices for main coolant pumps established by [Div A] and [Div B] through submission of false and misleading cost information to the Government.

DCAA should not overlook the fact that the precedent that will be established if [Contractor Z] is allowed to retain unearned profits achieved in this highly questionable manner will be extremely unfavorable to the Government.

Admiral Rickover has requested that his following comments be included in this memorandum:

> "If an ordinary citizen were treated the way the Government was treated in this matter, would he consider that he had obtained a 'square deal', or would he consider that he had been subjected to sharp practices? A question that might be asked is: Would [Contractor Z] be willing to have all the circumstances attending these contracts made public?
>
> "I do not believe the Government has any obligation to pay Contractor Z an unearned and excessive profit on these subcontracts. After all, entering into a contract means that there has been a meeting of minds. There was no meeting of minds. [Contractor Z], knowing the generally accepted limits to profit on Government work, and knowing that their price would provide a profit two to six times higher than the generally accepted levels, failed to so advise the other party who was proceeding on the basis that [Contractor Z] was acting honorably and in good faith. Rather, [Contractor Z] concealed these facts from the Government officials responsible for the work. There was thus no meeting of minds, and, in my view, the Government has no obligation to pay any excess profit to [Contractor Z].

"I am particularly disturbed by the effort by DCAA to pay [Contractor Z] $3 million in unearned and excessive profits. The Revised Statutes require that a Government official do all he can to protect the interests of the Government. Certainly one cannot expect contractors to look out for the Government's interests. This case is ample proof. Further, there is a Presidential Directive requiring Government employees to conserve Government funds. I do not believe DCAA is, in this instance, complying with the intent of the Revised Statutes or the Presidential Directive.

"I find it unbelievable that a Government office can take nine months to consider a case, recommend a decision against the Government, and then allow only 10 days for a reply by those who are determined to protect the Government's interests in the matter. I do not understand why the interests of a corporation which made profits of from 48% to 65% on defense equipment, an excess of $3 million on a total of 3 orders, should be given precedence over the interests of the 200 million citizens who must pay this excess profit."

5. NAVSHIPS considers that the preceding points, and others should be developed and presented in an adequate and proper manner to protect the interests of the Government. This cannot be done within the ten days allotted by DCAA. NAVSHIPS will, however, endeavor to complete its review and provide its additional comments by April 29, 1968. NAVSHIPS strongly opposes any settlement which would give consideration to the DCAA recommendations favoring the contractor in references (a) and (b) without NAVSHIPS having had the opportunity to complete its review and present its views in the matter.

[Name omitted],
Counsel for Naval Ship Systems Command.

CHRONOLOGY REGARDING PURCHASE ORDERS 56–PR–6502 AND 56–PR–6022

1–6–58	[Div A] requested bids for 42 S5W main coolant pumps and 36 volutes.
1–16–58	[Div A] requested a cost breakdown from [Div B] for 32 S5W coolant pumps and 25 volutes under procurement on [Div A] order 56–PR–1 awarded 7–26–56.
1–29–58	Bids received.
3–7–58	[Div A] placed a telegraphic order with [Div B] for 42 S5W main coolant pumps and 36 volutes.
4–2–58	[Div A] received and submitted to the Government a "Price Breakdown" from [Div B] showing separate estimates for labor cost, material costs, tooling, engineering, total manufacturing costs, G&A, total costs, profit and selling price for lead main coolant pump, the lead volute, production pumps and production volutes for units on purchase order 56–PR–1. This breakdown showed profit of 10% on costs.
5–2–58	[Div A] requested formal Navy approval for the procurement of 42 S5W main coolant pumps and 36 volutes in accordance with prime contract requirements.
6–9–58	Government consented to the procurement.
12–16–58	[Div B] accepted the order conditionally.

CHANGE NOTICE NO. 2 TO PURCHASE ORDER 56–PR–6502

10–10–58	[Div A] requested a bid for 42 S5W main coolant pumps and 36 volutes on a proprietary basis from [Div. B.]
11–19–58	[Div A] requested [Div B] furnish a cost breakdown for 42 S5W main coolant pumps and 36 volutes ordered on Purchase Orders 56–PR–6502 and 56–PR–6022.
12–15–58	[Div B] submitted a "Price Breakdown" to the Assistant Bureau of Ships Technical Representative showing estimates for material costs, labor costs, other manufacturing costs, total manufacturing costs, G&A total cost, profit at 10% and selling price listed separately for motor and for volute.
1–26–59	[Div B] submitted final quotation to [Div A].
2–20–59	[Div A] requested formal Navy approval for the procurement of 42 S5W main coolant pumps and 36 volutes as a change notice to Purchase Order 56–PR–6502 in accordance with Prime Contract requirements.
3–23–59	Government consented to the procurement.
4–6–59	[Div A] place order with [Div B] for 42 S5W main coolant pumps and 36 volutes.

FACT SHEET

DOD Request

PAGE 197.—Request fact sheet on referenced pending contract.

Admiral Rickover's testimony

"Contractors are not required to submit cost data if a contracting officer determines that there is adequate competition. This is a difficult determination. If the contracting officer determines that competition is adequate, he is able to place the order quickly, without analyzing cost estimates or negotiating. If he judges that competition is inadequate, he must obtain cost breakdowns, have the cost estimates audited, and then negotiate with the supplier, documenting the results.

"Since this normally takes 60 to 90 days or longer, Government agencies obviously tend to conclude that competition is adequate, whenever possible, in order to avoid the extra work and delay involved in noncompetitive procurements.

"Right now a contract covering many million dollars is pending. Two companies bid. The low price was about 25 percent more than the Government estimate based on past experience similar work. Nevertheless, the contracting officer initially wanted to declare the bids to be competitive. Had he done so, the Government could never thereafter challenge the cost figures in the bids. I took issue with this. It would be the wrong thing to do from the Government's standpoint. The contracting officer reluctantly agreed to negotiate the procurement, rather than blindly giving the contractor his requested price. Of course, this is the more difficult approach, since it requires a lot of work by the Government to analyze and negotiate the costs."

Additional Facts

The example referred to bids for construction of DLGN 36 and DLGN 37. Although the low bid was about 25 percent more than the Government estimate, Navy contracting officials recommended that the

contract be awarded without negotiation. NAVSHIPS technical and project personnel convinced the Chief of Naval Material that NAVSHIPS should negotiate with the low bidder. As a result of negotiations, the base price for the two ships was reduced by about $27 million.

FACT SHEET

DOD Request

PAGE 198.—Request fact sheet on procurement of propulsion turbines.

Admiral Rickover's testimony

"Requirements for cost data under the Truth-in-Negotiations Act can be waived. Surprisingly, these waivers are granted to many large defense contractors.

"For example, the requirement for cost data was waived for a procurement of propulsion turbines, even though the price was substantially higher than for similar equipment on a prior order and included an admitted profit of 25 percent. The company argued that, in its opinion, the price quoted was based on competition, therefore, they would not provide cost data even though the contracting officer had decided a cost breakdown was required under the Truth-in-Negotiations Act."

Additional Facts

On May 23, 1967, the Assistant Secretary of the Navy (Installations and Logistics) waived the requirement to obtain detailed cost and pricing data in conjunction with a $10 million procurement of propulsion turbines.

Assistant Secretary of the Navy (Installations and Logistics) memorandum dated November 24, 1967 (attached) informed Assistant Secretary of Defense (Installations and Logistics) of the circumstances surrounding this waiver.

Memorandum for the Deputy Assistance Secretary of Defense (Intallations and Logistics) (Procurement).

Subj: Waiver of Requirements under 10 U.S.C. 2306(f) for submission and certification of cost and pricing data by [Contractor X] under subcontract with [Shipbuilder A] under NAVSHIPS Contract N00024–67–C–5136.

Encl: (1) Copy of Determination and Findings No. 67–3 dated May 23, 1967; (2) ASTSECNAV (INSLOG) letter to [Contractor X] dated April 18, 1967; (3) [Contractor X] letter to ASTSECNAV (INSLOG) dated May 1, 1967.

In order the complete your records on the subject waiver action involving the subcontract for the main propulsion plant for the second nuclear powered aircraft carrier CVAN 68, the following information is furnished:

a. Enclosure (1) is a copy of a Determination and Findings made by me waiving the requirements under 10 U.S.C. 2306(f) for submission and certification of cost and pricing data on the subject subcontract. In accordance with my discussion with then Assistant Secretary of Defense (Installations and Logistics) ——— this action was taken only after I wrote to Mr. ———, the President of [Contractor X] (enclosure (2)) and I received his refusal to furnish the cost data and pricing certificate (enclosure (3)).

b. As stated in paragraph 7 of enclosure (1), the main propulsion turbines and gears are critical for the nuclear carrier CVAN 68 and it was in the best interest of the Government to waive the subject requirement in this case. This equipment in so important that a DX priority rating has been assigned.

I will be glad to furnish any further information you may need.

(Signed) ——— ———,
Assistant Secretary of the Navy (Installation and Logistics).

DETERMINATION AND FINDINGS

Waiver of Requirements under 10 U.S.C. 2306(f) (P.L. 97–653) for Submission and Certification of Cost and Pricing Data.

Upon the basis of the following Findings and Determination which I hereby make as agency head, the requirement for submission of cost or pricing data and certification thereof under the subcontract described below is hereby waived pursuant to the authority vested in me by 10 U.S.C. 2306(f).

FINDINGS

1. The Navy has entered into contract N00024–67–C–5136 with [Shipbuilder A] to design the propulsion plant for the second nuclear powered aircraft (CVAN 68) and to furnish long lead time propulsion plant equipment for this ship. In accordance with the terms of that contract, [Shipbuilder A] requested Navy Contracting Officer consent to award of a subcontract to the [Contractor X] for the CVAN 68 main propulsion turbines, gears and associated equipment.

2. [Shipbuilder A] solicited proposals from the only two available sources capable of building this machinery. Final proposals received were as follows:

[Contractor X]	$10,113
[Contractor Y]	$12,720

Consent of the Contracting Officer to award a subcontract to the [Contractor X] was requested on the basis of the above competition and a price analysis made by the [Shipbuilder A].

In connection with his review, the Contracting Officer requested that cost data be obtained. [Shipbuilder A] advised the Navy that [Contractor X] declined to submit cost data stating that their price was based on evaluation of the current competitive market level and not on consideration of absolute cost elements. The company subsequently declined requests from the Navy to submit cost or pricing data directly to the Navy. The [Contractor X] advised the Navy that they considered their proposed price was established in competitive market conditions and were unwilling to negotiate the price or elements of the price.

In subsequent meetings with the Navy, the company stated that their proposed price for the CVAN 68 turbines and gears was developed by extrapolation from their standard pricing sheet, and checked against a buildup from previous prices paid to the Navy for the CVA 66 machinery ordered by the Navy in 1960. Elements of the buildup of price from the CVA 66 price was furnished to the Navy. However [Contractor X] would not provide substantiation of these individual elements of buildup, nor would they agree to negotiate

either the total price or the individual elements. These elements of price buildup, among other things, indicated a profit directive of 20% of sell (25% of costs). The company stated their present pricing policy is to provide for a 10% net profit on sales after taxes or 20% of sell before taxes.

After the above discussions, the matter of submission of cost or pricing data was referred directly to the President of the [Contractor X] by the SECNAV (INSLOG). Again the company declined to submit such data.

In view of the above, the Navy and the [Contractor X] have agreed to an incentive pricing arrangement which would limit the amount of profit to be earned by the Company, with the final subcontract price to be established on the basis of certified costs submitted by the company after completion of performance.

The main propulsion turbines and gears are critical to the ships construction schedule for the nuclear carrier CVAN 68. Since further delay in awarding this subcontract for the machinery could jeopardize present shipbuilding schedules for the ship, it is considered in the best interest of the Navy to proceed with consent to the subcontract with [Contractor X] under NAVSHIPS Contract N00024–67–C–5136 on the basis outlined herein without obtaining cost or pricing data.

DETERMINATION

It is hereby determined to be in the best interests of the Government to waive and I hereby do waive, for the aforesaid subcontract, the requirements for submission and certification of cost or pricing data.

(Signed) ——— ———.

(The document was signed by the Assistant Secretary of the Navy, Installations & Logistics.)

Dear Mr. ——— (President of Contractor X)

You may recall that on 16 March 1967, Admiral ——— of the Naval Ship Systems Command wrote you concerning the refusal of Contractor X to furnish cost or pricing data in connection with its proposal to Shipbuilder A for furnishing the critically required turbines and gears for our newest nuclear aircraft carrier, CVAN 68. You referred this letter to Mr. ———, your Vice President and General Manager of Division Z which has cognizance over this project. A copy of Mr. ———'s reply is enclosed.

As you are aware, Public Law 87–653 provides ". . . any subcontractor shall be required to submit cost or pricing data . . . (1) prior to the award of a subcontract at any tier . . . if the price of such subcontract is expected to exceed $100,000 . . .: Provided, that the requirements of this subsection need not be applied to . . . subcontracts where the price negotiated is based on adequate price competition . . . ." Mr. ——— bases his refusal to furnish these data on the ground that there was competition. Obviously, the Government is in a better position than Mr. ——— in determining the extent to which price competition actually was present in this porcurement. As a result of our review, we have determined that there has not been adequate price competition in this procurement within the meaning of the statute as implemented by the Armed Services Procurement Regu-

lation. Consequently, we have no legal basis for not obtaining the cost or pricing information required by this statute.

Inasmuch as Contractor X is one of the largest of our defense contractors it seems to me that you, on behalf of the corporation, would want to review personally the position which has been taken by Mr. ———, your division manager. Hence, I would appreciate receiving your personal reply to our request for cost or pricing data as required by Public Law 87–653.

Sincerely yours,

(Signed) ——— ———,
Assistant Secretary of the Navy (Installations and Logistics).

Re N00024–67–C–5136; Ser. 0246–139.

REAR ADMIRAL ——— ———,
Acting Commander,
Naval Ships Systems Command,
Department of the Navy,
Washington, D.C.

DEAR ADMIRAL ——— ———: Mr. ——— (President of Contractor X) has asked me to reply to your letter of March 16, 1967, with regard to the propulsion turbine and gears for the CVAN 68. I apologize for the delay in replying; however, I have been out of the country for the past two weeks.

We reluctantly quoted on this job to [Shipbuilder A] in what was a competitive situation, and our price was one on the basis of which we were willing to win or lose the competition after you had evaluated all the other elements of the various offerings. Under these circumstances, we would not be in a position to change our price as a result of any cost discussion; and, therefore, we feel that to supply any cost estimating data could only lead to misunderstanding. For these reasons, we have declined to supply cost data to substantiate the price.

We are willing, however, to meet with your people and to discuss the reasonableness of the price, based on previous prices you have paid for similar equipment as well as additional requirements for this job, inflationary factors, and other special requirements for these units.

We recognize the urgency of this project, and we are anxious to deliver the equipment when needed if we are successful in obtaining the contract. I think you are familiar with the fact that, because of the urgency of the situation, we agreed to proceed with the preliminary design without a contract so that negotiations with regard to the detailed technical requirements would not delay delivery. We are willing to meet with your people at any time to explain in detail our position in this matter.

Very truly yours,

(Signed) ——— ———.

(The letter was signed by the manager of division Z of the contractor X company.)

MAY 1, 1967.

ASSISTANT SECRETARY OF THE NAVY,
(Installations and Logistics),
Washington, D.C.

DEAR MR. ——— ———: This is in reply to your letter of April 18, 1967, concerning our pricing to [Shipbuilder A] for turbines and gears for the nuclear aircraft Carrier CVAN 68. As requested in your letter, I have reviewed the position which was taken by Mr. ——— in his letter of March 31, 1967.

Your letter indicates that adequate price competition has not been present in this procurement within the meaning of the statutes and consequently you have no basis for not obtaining cost or pricing information. It would appear that the Government should be concerned primarily with the reasonableness of the price, and, in this instance, I have been assured that the price is reasonable and that the price was submitted on the basis that competition existed. Moreover, representatives from [Division Z] met on April 7, 1967 with representatives of the Navy to discuss the price. At that meeting, and subsequent discussion on April 10, 1967, our representatives presented pricing data to substantiate the reasonableness of the quotation.

To further assure the Government of a fair price, we made the offer to accept a contract at a maximum price of $10,100,000 (the quoted price) including a downward price adjustment clause which will limit profit to an agreed-upon, maximum dollar figure. Our representatives also agreed to provide at the completion of the contract a certification that costs were recorded against this contract in accordance with our normal accounting procedures.

I think that the offer that has been made is reasonable and will assure the Government of a fair price. Accordingly, it does not seem appropriate that we be required to submit cost data or that a pricing certificate be required.

Sincerely yours,

(Signed) ——— ———.

(The letter was signed by the president of Contractor X.)

FACT SHEET

DOD Request

PAGE 198.—Request fact sheet on manufacturers of large computers.

Admiral Rickover's testimony

"Manufacturers of large computers needed by the Government for its research and development programs also have refused to provide cost data on Government orders because they consider their prices to be based on competition or standard catalog prices. Waivers of the Truth-in-Negotiations Act have been granted on orders with these firms. Each of these large computers costs the Government $6 or $7 million or more, so we are not talking about chicken feed.

"Few basic material suppliers such as steel mills, nickel producers or forging suppliers provide cost data. Rather than suffer the delays inherent in obtaining a waiver of the Truth-in-Negotiations Act—in the Department of Defense, waivers can only be granted at the Assistant Secretary level—contracting officers may determine that competition is adequate or that the price is based on a standard catalog price.

"Again, the establishment of uniform standards of accounting would go far to make the Truth-in-Negotiations Act more effective. I also recommend that the Truth-in-Negotiations Act be strengthened to prohibit its being waived for procurements with companies who do large amounts of negotiated defense work, say over $1 million annually."

Additional Facts

In June 1967, the Atomic Energy Commission reviewed in depth the problem of getting cost or pricing data for advanced computers. The Commission report stated in part:

> "While there are other problems * * * involved in the procurement of advanced computer systems, the refusal by computer manufacturers to furnish cost or pricing data is a problem common to all such procurements. To our knowledge, only one computer manufacturer has ever *shown* cost or pricing data to any Government agency, and this was done under very unusual conditions." (A footnote further explains that the one unusual case involved a corporate counsel showing cost or pricing data to the Government agency's counsel and then taking it back.)

If further details are required, they should be requested from the Atomic Energy Commission since the report is an internal document.

FACT SHEET

DOD Request

PAGE 201.—Request fact sheet on proposal to award large contract without negotiating price.

Admiral Rickover's testimony

"Presently, the most prevalent concern in Navy contracting circles appears to be that contractors should get enough profit. Recently, Navy contracting officials proposed to award a large contract based on two bids, without negotiating the price. The low bid was about 25 percent higher than the official Navy estimates for the equipment; a preliminary review of the contractor's bid by Navy technical personnel indicated several areas where the contractor's price was substantially higher than actual cost experience from a prior procurement. Yet, the Government contracting officials did not want to conduct negotiations to find out why. They expressed concern that the contractor was not making sufficient profit on defense work. Most of the work at this contractor's plant is for the Government and the company recently reported record sales and higher earnings. Nevertheless, the Navy's contracting officials were concerned lest the Navy pay too little profit.

"The Navy contracting officials recommended that the contract be awarded at the contractor's bid price, relying on an incentive clause in the contract to encourage him to keep his costs down. In this manner, they argued, the Navy and the contractor would not need to go to the trouble of reviewing the contractor's cost estimates as required by the Truth-in-Negotiations Act. One Navy official stated he did not think negotiations would be fruitful because the estimate by the Navy's technical personnel was probably too low.

"The attitude that the Government must look out for the welfare of industry appears to be prevalent in the Department of Defense."

Additional Facts

Please see Fact Sheet prepared for the example on page 197. This is the same procurement.

FACT SHEET

DOD Request

PAGE 203.—Request fact sheet on general and administrative expense cases.

Admiral Rickover's testimony

"For several years, I have testified to this committee that the Navy was paying substantially more for general and administrative expenses at two Atomic Energy Commissioned-owned, contractor-operated laboratories than the Atomic Energy Commission would pay for the equivalent work.

"I formally raised this issue in 1964 with the Navy officials responsible for establishing general and administrative rates for Navy work at these Government-owned laboratories. They answered to the effect that they were only following Department of Defense policy. When I persisted, they initiated a change to the Armed Services Procurement Regulation which they considered to be necessary in order to negotiate lower general and administrative expenses at these laboratories. After several studies and more than a year of review, the Armed Services Procurement Regulation was changed by the Armed Services Procurement Regulation Committee. After all this, the Navy then decided nothing was wrong with the amount they had been allowing for general and administrative expenses at these laboratories. Thus after three years of delay, the Navy decided to do nothing to reduce the additional expenditure of hundreds of thousands of dollars a year in general and administrative expenses on these two Navy contracts. Further, they wasted hundreds of hours of time of Government officials in changing the Armed Services Procurement Regulation when apparently there was no actual intent on their part to negotiate lower rates. You must bear in mind that what is involved here is not merely the several hundred thousand dollars on these two contracts. What is involved is a practice that, if eliminated throughout the Defense Department would save millions of dollars.

"No doubt, before the issue is finally settled, the Government bureaucracy will decide that the Atomic Energy Commission is 'unfair' to business and should pay higher rates. I am now sorry I started this, because it will all probably end up with higher rather than lower costs to the U.S. Government and the taxpayers."

Additional Facts

This item has been discussed in detail before the House Appropriations Committee each of the past four years as follows:

Date	Hearings	Page
May 12, 1965	Fiscal year 1966 appropriations	24
May 11, 1966	Fiscal year 1967 appropriations	164
May 1, 1967	Fiscal year 1968 appropriations	113
May 1, 1968	Fiscal year 1969 appropriations	203

GAO Draft report B–124125 dated April 20, 1967 also provides information on this subject.

I am informed that the attached draft entitled "Response to General and Administrative (G&A) Expenses" was prepared and distributed by the Office of the Secretary of Defense (Installations and Logistics) and that it has been used in developing the Department of Defense position in this matter. There is a fundamental error in this draft; it failed to recognize that, although the fixed-fee *percentages* are different for Atomic Energy Commission (AEC) contracts as compared to the Navy contracts, the fixed-fees are paid in accordance with the same guideline. Thus with respect to fixed-fee, the Navy paid exactly what the AEC would pay for equivalent work. However, the Navy paid substantially more for G&A expenses at these AEC-owned laboratories than the AEC would pay. This was explained to Office of Assistant Secretary of Defense (Installations and Logistics) representatives during a meeting with Navy representatives on May 15, 1968 in which the Navy announced its decision to determine G&A expense at these two laboratories in the same basis as the Atomic Energy Commission.

The respective contractors have been advised of the Navy decision. The Navy is awaiting their response.

[NOTE.—In the following pages, the symbol (A) represents Contractor A; the symbol (1) represents the laboratory operated by Contractor A; the symbol (B) represents contractor B; the symbol (2) represents the laboratory operated by Contractor B]

RESPONSE TO GENERAL AND ADMINISTRATIVE (G. & A.) EXPENSES

Admiral Rickover made the following recommendation regarding corporate general and administrative expenses:

> "I suggest that you have the General Accounting Office recommend a uniform policy for determining the amount of corporate general and administrative expense paid by all departments and agencies of the Government. I also suggest that this uniform policy require that G. & A. costs to the Government be consistent with the actual benefits received by the Government."

The Department of Defense is in accord with the suggestion that there should be a uniform policy for determining the allowability of corporate general and administrative expense, binding upon all departments and agencies of the Government, and that such policy should require that reimbursement of G. & A. expense by the Government be on the basis of benefits accruing to the Government. The Department of Defense policy as enumerated in ASPR is in consonance with Admiral Rickover's recommendation and could very well be adopted for use on a Government-wide basis.

ASPR paragraphs 15–201 through 15–204 amply establish the principles and procedures pertaining to allocability of all costs. They accordingly include home office, divisions, branch, and any other central office expenses. These paragraphs also provide for logical expense grouping, and proper distribution to benefiting cost objectives.

Attention is invited to ASPR 15–203 which provides for developing different rates and allocation procedures. For example, in 15–203(b) it states, "Indirect costs shall be accumulated by logical cost groupings with due consideration of the reasons for incurring the costs. Each grouping should be determined * * * on the basis of the benefits accruing to the several cost objectives * * *." ASPR 15–

203(c) provides, "* * *. The base should be selected so as to permit allocation of a grouping on the basis of the benefits accruing to the several cost objectives * * *." ASPR 15–203(d) provides, "The method of allocation of indirect costs must be based on the particular circumstances involved * * *." In addition, ASPR 15–201.4 provides that a cost is allocable if it, "* * * (iii) is necessary to the overall operation of the business, although a direct relationship to any particular cost objective cannot be shown."

Although the language currently in ASPR quoted above is proper, DOD has concluded that a subparagraph (not published at this time) could beneficially be added for the sake of emphasis to 15–203 as set forth below:

> 15–203(f)—Special care should be exercised in applying the principles in (b), (c), and (d) above when Government-owned contractor operated (GOCO) plants are involved. The distribution of corporate, division or branch office general and administrative expenses to such plants when they operate with little or no dependence on corporate administrative activities, may require more precise cost groupings, detailed accounts screening, and carefully developed distribution bases.

Although the current DOD policy as set forth in ASPR is in consonance with Admiral Rickover's recommendation, it is evident from his testimony that he believes the Atomic Energy Commission policy to be appropriate. He stated:

> "Recently I found that the Navy was being charged much more for company headquarters G. & A. expense on Navy cost-type contracts for research work in AEC-owned laboratories than the AEC pays * * *. I requested assistance from the head of the Navy office involved to obtain lower G. & A. rates for Navy work at this AEC-owned laboratory."

Admiral Rickover's testimony also included a memorandum for the Chairman, ASPR Committee, dated May 24. 1965, (which incidentally was revised substantially before finally released on June 8, 1965) which contained the table set forth below:

	AEC		Navy	
	Costs billed	G. & A. expense	Costs billed	G. & A. expense
(1)	$37,000,000	$60,000	$16,000,000	$230,000
(2)	59,000,000	100,000	17,000,000	120,000

DOD believes the table above is misleading, particularly when viewed along with the balance of Admiral Rickover's testimony. For example, we believe the reader of the testimony would gain the impression that the total amount of G. & A. expense for the (1) was approximately $290,000 and that AEC work was charged with $60,000 and Navy work with $230,000. The reader would also gain the impression that Navy was charged with about 80% ($230,000) of the G. & A. expense when it accounted for only about 30% of the volume, while AEC was charged with about 20% ($60,000) of the G. & A. expense when it accounted for approximately 70% of the volume. DOD would be greatly concerned if these impressions were true. Fortunately, they are not.

Cost data for (1) as reflected in Contractor A's records for the year 1962 should dispel any erroneous conclusions which may have been formed. The total pool of G. & A. expense for (1) for 1962 amounted to $1,015,600 of which $737,600 was charged to AEC work and $278,000 to Navy work. Of the $737,600 charged to AEC work, $60,000 was recovered by (A) through direct reimbursement; $578,100 (according to (A)) was recovered by (A) in the AEC fee; and the remaining $99,500 was unallowable cost absorbed by (A): Of the $278,000 charged to Navy work, $238,600 was allowable and recovered by (A) and $39,400 was unallowable cost absorbed by (A).

It appears as though Admiral Rickover and (A) do not agree whether the $578,100 cited above was recovered by (A) in the AEC fee. DOD does not know for certain whether the $578,100 was or was not recovered by (A) in the AEC fee—this is a matter which is best known by the two parties to the AEC contract, (A) and AEC. DOD does know that $578,100 was allocable to AEC work and was treated as such on (A's) records. DOD also knows that the $578,100 was not charged against the Navy work—it was either recovered in the AEC fee or it was absorbed by (A). Perhaps the following cost and fee data will place the situation at (A) in the proper perspective.

Description	Total	AEC	Navy
Costs reimbursed, excluding G. & A. type items	$51,356,000	$36,798,000	$14,558,00
G. & A. reimbursed, excluding $578,100	298,000	60,000	238,60
Total costs reimbursed, excluding $578,100	51,654,600	36,858,000	14,796,600
Add the $578,100 G. & A. excluded above	578,100	578,100	0
Total costs reimbursed, including $578,100	52,232,700	37,436,100	14,796,600
Fee—Assuming $578,100 unreimbursed	1,833,000	1,388,000	445,000
Deduct the $578,100 assuming it was reimbursed	578,100	578,100	0
Fee—Assuming $578,100 reimbursed	1,254,900	809,900	445,000
Percent fee is to total costs reimbursed, assuming $578,100 unreimbursed	3.5	3.8	3.0
Percent fee is to total costs reimbursed, assuming $578,100 was reimbursed	2.4	2.2	3.0

Based on the data set forth above, if Admiral Rickover's position is accepted that the $578,100 was not reimbursed, then AEC paid (A) a higher free (3.8%) than did the Navy (3.0%). On the other hand, if (A's) position is accepted that the $578,100 was reimbursed (in the AEC fee), then AEC paid (A) a lower fee (2.2%) than did the Navy (3.0%). In either case, the difference between the AEC and Navy fees is only 0.8%—a relatively insignificant amount which could have resulted from a variety of causes.

DOD also believes that the reader of Admiral Rickover's testimony should be aware of the pertinent AEC cost principle as set forth in AEC Procurement Regulation, Part 9–15, paragraph 9–15.5005–2, which is quoted below for convenience.

> "(a) AEC compensates operating, construction and on-site architect-engineer contractors through the fixed fee for general and administrative expenses incurred in the general management and administration of the contractor's business as a whole by the contractor's home, divisional or branch offices.
>
> "(b) In a particular case, the contractor may be compensated on the basis of allowable cost, rather than through the fixed fee for some or all of the expenses described in paragraph (a) * * *."

DOD is convinced that its policy for reimbursing contractors for G. & A. expense is superior to that of the AEC. The amount determined to be allowable and reimbursed can be readily ascertained under DOD contracts—it cannot be under AEC contracts. The DOD policy in ASPR as previously cited is aimed at allocating costs to the work which derives the benefit from the expenditure, while the AEC policy as quoted above is ambiguous and only states that G. & A. is reimbursed through fee. The AEC policy contains no guidance as to how the amount of G. & A. expense to be reimbursed through fee shall be computed. Clearly, the DOD policy is more definitive and equitable.

The DOD tri-service negotiations for G. & A. expenses at (A) and (B) were conducted in accordance with the policy and procedures set forth in ASPR, and were completely proper. DOD considers the allocation of G. & A. expense to Navy contracts resulting from such negotiations to be fair and equitable both to DOD and the two contractors. DOD can see no basis for an attempt to obtain lower G. & A. rates for Navy work at AEC-owned laboratories as espoused by Admiral Rickover.

In summary, the DOD concurs with Admiral Rickover's suggestion that there should be a uniform policy for determining the allowability of corporate general and administrative expense binding upon all departments and agencies of the Government and that such policy should require that reimbursement of G. & A. expense by the Government be on the basis of benefits accruing to the Government. DOD does not concur, however, that the AEC policy should be the basis for such a Government-wide policy. Rather, for the reasons stated previously, DOD is convinced that DOD policy as set forth in ASPR results in fairness and equity to both contractors and the Government and is a far better basis for a Government-wide policy.

INDEX

○