EXTENSIONS OF REMARKS

LEO RENNERT AND THE "NEIGHBORHOOD WHAT HAVE YOU" CONCEPT

HON. JEROME R. WALDIE

OF CALIFORNIA

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. WALDIE. Mr. Speaker, the high-principled and inspirational leadership provided Americans by their President in his efforts to assist an orderly implementation of the Court-ordered integration of the public school system has been in the highest traditions of a political ward boss in a machine-dominated city.

His choice of language in these inspirational efforts to "bring Americans together" on this issue and to inculcate in them a sense of respect for the Supreme Court and the authority of law, has been questioned by some who have suggested the President is motivated by political expediency rather than a desire to help the Nation over a difficult period of social transition.

Mr. Leo Rennert, a capable and distinguished reporter for the McClatchey Newspapers, has wryly suggested to the President another area where he might contribute his leadership in "bringing us together."

I include a copy of Mr. Rennert's recent column in that regard for the interest of my colleagues:

REQUIEM FOR THE NEIGHBORHOOD TEAM

(By Leo Rennert)

WASHINGTON.—President Richard Nixon, who is a devoted sports fan, might want to re-examine his defense of the neighborhood school and opposition to busing of students in the light of the New York Giants' decision to play their home football games in New Jersey come 1975.

With greener pastures, a new stadium and more ticket sales beckoning across the Hudson River at the Hackensack Meadowlands, the Giants announced they are leaving the old neighborhood at Yankee Stadium.

Mind you, even though they are moving to another state, they still consider themselves full-fledged, 100 per cent New Yorkers.

It's just that the concept of home and familiar surroundings has expanded a bit—at least in sports.

The new stadium, in East Rutherford, N.J., will be only seven miles from Manhattan and before you know it Giant fans will feel just as comfortable there as they have been in the House that Ruth built.

Wellington T. Mar, the president of the Giants, does not even plan a change of name for the team. He said:

"It was always the New York Giants and it always will be the New York Giants."

Assure—And to assure everybody the familiar neighborhood feeling will not be lost, Sonny Werblin, the head of the Jersey stadium-building group, remarked:

"The Giants aren't leaving New York. They're just moving to another part of the megalopolis."

If sports fans can accept these wrenching moves from familiar surroundings, why can't No. 1 Fan at the White House apply the same soothing words to opponents of school busing?

For example: "Your child isn't leaving the neighborhood. He's just going to attend school in a different part of it. You see, the neighborhood has grown a little."

Or: "Don't you fret, Sen. Tower, all kids in Austin are still going to go to class in Texas."

And: "Why, Gov. Wallace, even football fans love to use the bus to get to their new stadium."

Cue—The President might take his cue from New Jersey Gov. William T. Cahill, a Republican, who proudly announced his state would make major highway improvements to make the Giants' new stadium more accessible to New York fans.

Exclusive bus lanes, he disclosed, will be reserved on highways leading from the George Washington Bridge and the Lincoln Tunnel to the Hackensack Meadowlands.

So, you see, they're actually going to bus frail, innocent fans through treacherous traffic under and over the turbulent Hudson River to another state! Just think of the traffic hazards, the traumatic partings with family and friends, the mind-bruising shocks of venturing into unknown territory.

Will football really be a better sport by integrating New York and New Jersey?

And what if Gov. Cahill should use federal funds to build those exclusive bus lanes to the stadium?

If only this weren't an isolated instance. But the Boston Patriots are now the New England Patriots and playing in a new stadium in Foxboro, Mass. One sports home for fans in six states. No quibbling about cross-town busing there.

Angels?—And what about the California Angels? Aren't conservatives in Orange County dedicated enough to the neighborhood concept to insist that they be called the Anaheim Angels?

As the President so often has pointed out, the world of sports can be a great source of inspiration to guide us in our daily lives.

But if there are a few more franchise transfers and stadium switches; there is a danger that we might want to redraw the geographic boundaries of every neighborhood in the country.

And kids might even get the idea that riding a bus is fun. At least it's going to be for all those New York fans on their way to East Rutherford, N.J.

DR. CARL W. BLEGEN

HON. ROBERT TAFT, JR.

OF OHIO

IN THE SENATE OF THE UNITED STATES

Monday, September 13, 1971

Mr. TAFT. Mr. President, on August 23, 1971, the world, and particularly the university community, lost a great man with the passing of Dr. Carl W. Blegen. Dr. Blegen was the University of Cincinnati's distinguished service professor emeritus.

He was recognized as the world's outstanding authority on ancient Troy and as one of the top savants in the field of Greek archaeology.

History has recorded his many achievements in the field of classical archeology, but mankind also must see in him a most remarkable figure as a human being towering with the strength and confidence that make men great.

His great wisdom in his chosen field was like a lighthouse in a sea of darkness pointing the way toward hidden knowledge.

He was director of UC's seven annual expeditions to the Asia Minor site of Troy. His findings included a complete new chronology for the many successive cities there and were published in an 11-volume work.

After concluding diggings at Troy, he brought to light the palace of King Nestor, also of Homeric fame, at Pylos, Greece, and directed 15 seasons of excavations there.

Among findings at the site of Troy were the oldest written records uncovered in Europe up to that time in a vast store of clay tablets covered with the famous "Linear B" inscriptions going back to about 1200 B.C.

He was a giant in his chosen field, possessing the rare combination of intuition which penetrated the unknown and the personal warmth that endeared many of his associates to him.

He will be missed by many and most certainly by students of archeology the world over.

To his surviving relatives, we extend our sympathy.

I ask unanimous consent to have printed in the RECORD data about Dr. Blegen and the honors he richly deserved.

There being no objection, the data were ordered to be printed in the RECORD, as follows:

DR. CARL W. BLEGEN

DEGREES RECEIVED

B.A., Augsbury College and University of Minnesota.

Doctorate, Yale University.

M.A. (hon.) Yale University.

Ph.D. (hon.) University of Salonika, Greece, and University of Oslo, Norway.

Doctor of Letters, Oxford University, Cambridge University, England, and University of Athens, Greece.

Doctor of Humane Letters from Hebrew Union College, Jerusalem, Israel.

Doctor of Laws from UC.

AWARDS AND MEDALS

The Rosa F. and Samuel B. Sachs award from the Cincinnati Institute of Fine Arts, 1952 and 1957.

The gold medal from the Archeological Institute of America, 1965.

The Society of Antiquaries of London, 1966.

A gold medal from the University of Cincinnati in 1969.

The Wilbur Lucius Cross Medal of Yale's Graduate School Association in 1967.

HEALTH CARE FOR ALL

HON. MICHAEL HARRINGTON

OF MASSACHUSETTS

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. HARRINGTON. Mr. Speaker, anyone who has been to a hospital lately knows that being sick is growing more and more expensive. Hospital rates, now running at an average of $100 a day, but some projections place the cost at $1,000

AUTHENTICATED U.S. GOVERNMENT INFORMATION GPO

a day in just 10 years. Clearly, we are facing a health crisis.

Although many individuals are covered by private health insurance agencies or through their employment, many are not. And even the private insurance companies do not meet the demands of their customers. Senator EDWARD M. KENNEDY'S subcommittee looking into various national health insurance proposals has heard of many cases where family savings, of both the insured and the uninsured, were wiped out because of extensive medical care.

In today's New York Times, Richard D. Lyons details what the newspaper calls the "Dilemma in Health Care: Rising Cost and Demand." Inflation, the article says, has hit the medical industry as it has others with a in cost rise of 30 percent in the last 4 years. Duplication of services, more sophisticated advances, and a higher population has contributed to the rising costs.

Mr. Lyons' article notes that some hospitals are consolidating their services to avoid some of the wasteful duplication. And the need for preventive care rather than hospital care will also lower costs. The patient population in Philadelphia's State Hospital, for example, dropped from 6,400 to under 3,000 once the area established the West Philadelphia Mental Health Consortium, a group of clinics.

The demand for excellent health care for all has never been louder or more eloquent. Health should not be a luxury reserved for the rich, left to the whim of circumstances. Nor should anyone be denied entrance to a hospital because he or she cannot afford to pay the bill for the care required. Health, for the body and the mind, should be a part of our birthright. At this time, I am inserting the article from the Monday edition of the New York Times because I believe it outlines some of the problems facing us which must be dealt with in establishing a system of adequate medical care in a national health insurance program:

DILEMMA IN HEALTH CARE: RISING COST AND DEMAND

(By Richard D. Lyons)

WASHINGTON, September 12.—A decade ago, one medical group in Manhattan charged $35 for a basic physical checkup; today it charges $65. In those same years the going rate for an appendectomy in New York rose from $485 to $1,175 and the cost of an average hospital stay, for the nation as a whole, rose from $265 to $785.

Indeed, Americans are spending money on health care as if there were no tomorrow.

And while almost everyone is complaining about spiraling health care costs, most of the same people—rich and middle class as well as poor, insurers and providers as well as consumers—are also demanding more and better health care no matter what it costs.

The statistics for medical costs, at a time when accumulated inflation has swollen most economic indications, are staggering. This year Americans—through their own pocketbooks, their Federal, state and local governments, and their health insurance companies—will spend almost $80-billion for such things as 15 million operations, two billion prescriptions and the salaries of the five million people who provide health care.

One conservative Federal estimate sets the nation's total health bill by 1980 at $156-billion, which would be 8 per cent of the gross national product and over five times the peak annual cost of the Vietnam war.

"I think medical care is going to be the Vietnam of the nineteen-seventies—billions and billions of dollars going into a quagmire," says Dr. Frederic Bass, a health planner at the University of Pennsylvania.

In this era of inflation, no other item on the Consumer Price Index has risen so fast over the last decade as health costs. In the last four years alone, they have climbed 30 per cent.

Hospital rates have risen five-fold. Today they are hovering at about $100 a day, an unthinkable sum a decade ago. But a decade from now, according to some projections, hospitals may be charging $1,000 a day. At one Boston hospital, a bed in the intensive care unit for respiratory diseases now costs $425.75 day.

Such statistics provide only a partial picture, however. Behind them, there is a long period of dramatic progress in medical technology and, along with it, an unquantifiable but almost tangible rise in public expectations. And at the conjunction of all these factors are two fundamental questions:

If, theoretically, good health care is now possible for everyone, then how can the nation rationally allow anyone to go without it? But, if, practically, the cost of good health care continues to rise so steeply, then how can the nation maintain even its present standards for long without going bankrupt?

Personal "horror stories" of the financial and emotional costs of illness are seemingly endless: A New York couple is financially ruined by the medical costs of a son paralyzed by a football injury; an elderly black couple in Mississippi spend one-third of their meager Social Security check on medicine; a Californian undergoes a kidney transplant to save his life, yet does not have the funds to buy the drugs to keep it viable.

Ranging from Robert Ball, the director of the Social Security Administration, to Paul Stark, the head of a defunct Federal health center in Prestonburg, Ky., many medical administrators feel that the country is either spending too much money on health care or is not getting its money's worth.

REASONS FOR THE INCREASE

The reasons for this surge in spending include:

Inflation, which accounts for half the recent rise in health costs.

More Americans, 20 million more in the last 10 years.

Medicare and Medicaid, which accelerated the demand for services and helped to drive up their prices.

A philosophical shift to the now general opinion that health care is a right of every American, not just a privilege of birth or money.

More sophisticated medical techniques, such as open-heart surgery, that lead to better medical care but at greater cost.

Unionization of hospital workers, which gives higher salaries and more costly fringe benefits to a group that has been among the lowest paid in the nation for decades.

There are other reasons, but they are much harder to document with numbers. Critics of the national health care system—many call it a nonsystem—say it has and is creating vast inequities. For example, in New York City it is at times almost impossible to find a hospital bed, that half the beds in San Francisco hospitals are empty and more hospitals are opening there.

The critics hold that there are vast inefficiencies in the prescription of drugs, the payment for health insurance and the services provided by both hospitals and doctors. For example, a favorite remark of Senator Kennedy, the Massachusetts Democrat who is the chief Congressional critic of the health care system, is that there are more neurosurgeons in his home state than there are in the British Isles, which have 10 times the population.

Another trouble is that the flood of new money into health care has not been matched by an increase in efficiency. In fact, it seems to have acted in reverse in some permutation of Parkinson's law.

"It costs more and more all the time to stand still," says John G. Veneman, Under Secretary of Health, Education, and Welfare. Mr. Veneman and other Nixon Administration officials were appalled by health costs when they took office, but Federal expenses have continued to shoot up despite their efforts.

Where does all the money go? Principally to hospitals, doctors, drugs, medical appliances, nursing homes and, as overhead, to the health insurance companies such as Blue Cross and Blue Shield that spread the risk of becoming ill.

Portions of the health care pie are divided roughly this way: 40 per cent for hospital care; 20 per cent for doctors' services; 10 per cent for drugs; 6 per cent for dentists' services, and 4 per cent for nursing home expenses. The remaining 20 per cent is divided among such items as medical research, construction of facilities, and administration.

Nearly every critic of the health care system believes Americans are spending too much money on drugs. Dr. Henry E. Simmons, chief drug officer of the Food and Drug Administration, estimates that "Americans spend half a million dollars a year on drugs for which there is no valid proof of efficacy."

Just recently the F.D.A. succeeded in removing from public sale a drug named Panalba after a legal battle that ran on for years. During that time consumers were spending $30-million a year on the product, even though Federal judges as well as Federal scientists had found it to be ineffective.

HIGH DRUG PROFITS

While drug prices have not risen dramatically, the pharmaceutical industry reaps the highest profits in terms of return on investment—20 per cent—of any large segment of American industry. Congressional investigations have revealed huge profits in some specific drugs—of over 1,000 per cent in isolated cases—yet drug companies have successfully turned back most attempts to reduce prices.

Another factor is doctors' fees. "You can't reform the health care system unless you delve into the pocketbooks of doctors," says Dr. Robert D. Eilers, director of the Leonard Davis Institute of Health Economics. He notes that one medical group recently hired a surgeon for a salary of $85,000 a year "plus bonuses."

Doctors, the most highly paid professionals in the country, earn a median income of $40,000 a year—after expenses but before taxes—according to our calculation. Only one per cent of Americans earn as much as this. Federal economists estimate that doctors' fees are almost 70 per cent higher than they were in the late nineteen-fifties, a rise almost double that of the consumer price Index.

Yet doctors have their own economic problem. Premium rates for medical malpractice insurance, for example, have been soaring. One New York surgeon said he paid an annual premium of $50 when he started practice in 1950. He expects that next year's premium will be $5,050, a hundred times as much. This expense he passes along to the consumer in the form of higher fees.

"HAVE TO PUT THE CRUNCH ON"

Despite all the complaints about drug costs and doctors' fees, most of the grumbling over the rise in health costs has been directed at hospitals. For hospitals have been getting the lion's share of health expenses.

The most common criticism has been that the hospitals have never had the incentives needed for them to effect economies. In addition, most hospitals are controlled by doctors who are unfamiliar with the modern management practices that might curb costs.

"Hospitals are the problems, but Blue Cross hasn't pushed them hard enough," says Dr. Herbert S. Denenberg, the new Pennsylvania insurance commissioner. "You have to put the crunch on someone if you're going to control medical costs."

In a rare effort to force economies, the insurance commissioner rejected a $73-million premium rate increase request from Blue Cross of Greater Philadelphia, which has been awarded an annual increase for the last quarter century. He wants to retain Blue Cross, but force it in turn to force hospitals to effect economies.

Dr. Denenberg, one of the new breed of reformers in the health care field and a friend of Ralph Nader, the consumer advocate, also accuses the other private insurance companies of "just shoveling money back and forth—they have not paid attention to cost and quality controls."

The Pennsylvanian is one of 20 new state insurance commissioners who have taken office in the last year. Many of them are determined to force economies in health costs. Others include Kenneth Deshetler, Ohio's Director of Insurance, and John F. O'Leary, chairman of the Massachusetts rate-setting commission.

Mr. O'Leary wants state and Federal agencies to intervene to force down hospital costs and some states, including New York, Maryland, California and Pennsylvania, are considering the creation of hospital rate setting commissions similar to those that regulate transportation, electric and gas rates.

Gordon Chase, head of the New York City Health Services Administration, accuses hospital leaders of using "quality of care" to "obscure inefficiency, obsolescence and traditional ways of operating which will not stand close scrutiny."

Three-quarters of all hospital bills are paid through Blue Cross, which was specifically created to perform the task. Yet Blue Cross has gone almost unregulated. Congressional investigators found recently that some local plans were paying the country club dues of Blue Cross executives, while others were paying for executives' vacations in Hawaii.

The national president of Blue Cross, Walter J. McNerney of Chicago, conceded that the hospital insurance plan "has not done everything as well as it should" to hold down hospital rates. "We have not been sufficiently self-critical and innovative," he adds.

How could hospital costs be brought down? The Good Samaritan Health Service in Phoenix found a way by amalgamating a group of 10 hospitals, thus doing away with duplicating services and overhead. The group saved $90,000 last year by buying all its insurance as a package. Common laundry services and the standardization of linens and uniforms all would help, but relatively few groups of hospitals have done this.

Costs could also be constrained by clusters of hospitals if individual institutions were assigned specific tasks, such as delivering babies and performing open-heart surgery, rather than each offering a full range of services.

Keeping people out of the hospital is uniformly acknowledged as the most effective method of holding down costs.

The patient population of Philadelphia State Hospital dropped from 6,400 to under 3,000 in recent years, aided by the creation of the West Philadelphia Mental Health Consortium, a group of nine community mental health clinics.

Dr. Robert Leopold, the consortium's director, says that while costs per patient are $6 a day at the health centers, they are $15 a day in the state hospital. The Philadelphia program, one of only a few in the nation, "shows that psychiatric patients can be treated near their homes outside the hospital and at far less cost," Dr. Leopold says.

Large cost savings from Pre-Paid Group Plans also are possible through the operations of what are known as prepaid group plans, of which the most familiar are the Kaiser foundation groups of California, Oregon, Hawaii, Colorado and Ohio.

By stressing preventive medicine, that is, treating potentially serious medical conditions before they can grow into costly diseases, persons enrolled in the Kaiser groups spend less than half as many days in hospitals as other Americans. Premiums for Kaiser care are also less than comparable insurance plans, while the annual increase in premium rates has been less than elsewhere.

The money-saving potential of providing preventive services, such as periodic physicals has been demonstrated by the Group Health Cooperative of Puget Sound in Seattle, which was started in 1947 and now provides health care for 140,000 people.

Last year the group health cooperative spent only $37 per member on hospitalization. This compares with $112 for the average American. Yet almost the same amount of money was spent for both groups for physicians' fees and outpatient services such as laboratory tests and X-rays. The lesson would seem to be that preventive medicine, properly run, can substantially reduce costly hospitalization.

A Federal takeover of health delivery systems, as occurred in Britain, has been advocated by some groups here. But at least two experiments with Federal funding in this country have indicated that it is little better economically than the system it is meant to replace.

In Prestonburg, Ky., one such project was canceled by the Office of Economic Opportunity after investigators found it to * * * services but also "totally corrupt." More than half of the $4-million spent on the project went for the salaries of courthouse cronies and overhead expenses.

Another Federal funded project, the Martin Luther King Health Center in the Bronx, spends $75 per patient visit, far more than it would cost to treat a person in a doctor's office.

MAINTENANCE GROUPS

The Nixon Administration is spending $45-million on what might be one partial solution to the health cost problem—the health maintenance organization. The H.M.O., as it is known, has been praised by the President as the prime new method of organizing health care delivery for quality and economy.

H.M.O.'s, a few of which are now in operation, use groups of doctors and facilities to treat the health needs of thousands of persons living in specific areas. In his health message of last February, Mr. Nixon also proposed a $300-million loan guarantee program to start dozens of H.M.O.'s. If the Administration has its wish, 80 per cent of all Americans will be enrolled in H.M.O.'s by the end of the decade.

This percentage is viewed as wildly optimistic even by those health care experts who say that reform of the system is absolutely necessary to bring better medical care to more people at less cost.

One of the new breed of reformers who are leading the attack against wasteful and inept practices in the health care field is Dr. Denenberg of Pennsylvania, who is a friend of Ralph Nader, the consumer advocate. Dr. Denenberg is the type of free wheeling challenger of the medical establishment who, according to one critic, makes Mr. Nader "look like Louis the Fourteenth."

"The health delivery system is so full of glaring inefficiencies and abuses that it is easy to give up in despair," says Dr. Denenberg. "For example, the providers of health care saddle the public with unnecessary, underutilized and duplicated services which not only produce astronomical costs, but also often deliver low quality care."

The complaints come from within the medical establishment as well. Dr. Edwin L. Crosby, president of the American Hospital Association, says the nation has too many hospital beds. And one of the truisms of medical practice holds that too many operations are being performed on too many people.

The results, according to Dr. Murray Hunter, medical director of a clinic in Fairmont, W. Va., is that "for a dollar today we're getting 50 cents worth of health care—if it were done right we'd get 80 cents worth."

Another problem is that merely increasing the money spent on health care does not necessarily lead to better-quality care. A Dr. Donald Harrington, director of the San Joaquin Medical Foundation in Stockton, Calif., puts it: "An open checkbook often leads to bad work."

Yet some doctors seem to be benefiting by such an approach. Dr. Lowell E. Bellin, New York City's first deputy health resources commissioner, says: "If after two years in private practice a doctor isn't clearing $35,000 a year, you should strap an electroencephalograph to his brain to find out why."

SUMMARY BILL LISTS THE CHARGES FOR A TERMINAL CANCER PATIENT IN A NEW YORK HOSPITAL

Description of charges	Total charges	Blue Cross or other insurance coverage	Patients charges
47 days at $113	$5,311.00	$4,620.10	$690.90
63 days at $121	7,623.00	5,209.90	2,413.10
Room and board	12,934.00	9,830.00	3,104.00
Laboratory	2,177.40	2,062.90	114.50
X-ray	852.00	852.00	
Pharmacy	800.80	653.80	147.00
Medical and surgical supply	431.55	405.55	8.00
Inhalation therapy	20.00	10.00	10.00
Cardiogram	35.00	35.00	
X-ray therapy	1,085.00		1,085.0
Phone	20.78		20.78
Total charges	18,338.53	14,223.50	4,115.0

THE RUSH TO RED CHINA

HON. JOHN G. SCHMITZ

OF CALIFORNIA

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. SCHMITZ. Mr. Speaker, while it is true that words are one thing and action another, and that many political figures do not consider it necessary that the two coincide, words and diplomatic gestures have a tremendous effect of their own. The President's proposed trip to the court of Oriental despot Mao Tse-tung and the abandonment of our long-standing policy of opposing the admission of Red China to the United Nations, has had the same effect on foreign nations as the starter's gun has on Olympic sprinters. The race to embrace Mao and Chou is on.

Actually the administration has been making overtures toward the Chinese Communists for more than 2 years. In July 1969 the State Department announced that certain restrictions on travel to Red China were being lifted. This was followed by the lifting of trade restrictions, approaches to Peking through third nations, and beginning to refer to Red China as the People's Republic of China in official announcements. These clear signs of changing U.S. policy encouraged countries such as Canada, Italy, Kuwait, and others to recognize Peking and consequently to sever

their ties with the Republic of China. However, the announced trip closely followed by the changed U.N. policy were the final cracks in freedom's dike which loosed the flood.

The momentous changes in international alinements taking place at this time cannot be reversed by U.S. fiat if the President's "risk for peace" does not actually induce the Red Chinese to become paper tigers. In the eyes of foreign nations we are committed now to Red China. Uncertainty about the determination of the United States to continue opposing Communist expansion, aroused in the minds of many foreign leaders by our demonstrated inability to defeat a fifth-rate power like North Vietnam, has been transformed into certainty that we no longer have that determination. Nation after nation is scrambling to get into bed with Peking, permanently altering the diplomatic balance against the Republic of China.

For example, both Great Britain and Turkey have announced that they will vote in favor of seating Red China in the United Nations and ousting Nationalist China from the Security Council. Since the President's visit to Peking was announced, Turkey has withdrawn its ambassador from Taipei, capital of Nationalist China, and has sent one to Peking. Japanese business firms are making a dramatic shift away from trade with Taiwan and toward trade with mainland China. These are only a few instances of a worldwide trend.

Although the administration says it will fight against expulsion of Nationalist China from the United Nations, while at the same time favoring admission of Red China to the General Assembly and assuring its membership on the Security Council by not opposing it, our changed policy has so stacked the international deck at this point that, barring complete reversal of our present course, successful opposition to this expulsion for more than 1 year is virtually impossible. In view of this evident fact, and the unwavering refusal of Red China to negotiate diplomatic recognition and U.N. admission on the basis of "two Chinas," it is difficult to believe the sincerity of our official talk about such a policy. Those like Henry Kissinger who have been negotiating directly with the Peking Government on this point must know that any such policy will have to be abandoned. Perhaps they think that holding out this illusory hope will lull the conscience of the American people so that most will not object to this sellout of our ally.

A recent news report quoted a Western European ambassador whose government plans to support Nationalist China in the United Nations this year as saying: "If you Americans really go out twisting arms, you may succeed in keeping Taiwan in the United Nations—but I'm not convinced that you will."

Neither am I.

UNIQUE CONCERT AT J. F. K. CENTER FOR THE PERFORMING ARTS

HON. NICK GALIFIANAKIS

OF NORTH CAROLINA

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. GALIFIANAKIS. Mr. Speaker, I should like to call to the attention of my colleagues a truly history-making event which occurred yesterday in the Concert Hall of the John F. Kennedy Center for the Performing Arts. It was a unique concert that pointed up and underscored one of this Nation's greatest musical heritages. I refer to the contribution to our cultural life of the Unitas Fratrum, the United Brethren, or as the denomination is more commonly referred to, the Moravians. These sturdy people emigrated in the 18th century from that area of Europe which is modern-day Czechoslovakia, to Pennsylvania and North Carolina. In the North Carolina wilderness they established three tiny communities called Bethabara, Bethania, and Salem.

From Bethabara, Bethania, and Salem to the banks of the Potomac—from Moravian Composer John Frederick Peter to Leonard Bernstein, is a long, long way in distance and in time. And the road to America's cultural maturity that found its apex in the magnificent structure that is the Kennedy Center, had its beginnings in the rolling Pennsylvania countryside around Bethlehem, and wound its way through the lush, green Piedmont North Carolina forest the first Moravians called the Wachau, or the Wachovia Tract.

The friends of Haydn and Handel braved a wilderness, and brought to it their unique and high heritage. They most certainly contributed enormously to our cultural world today. How very appropriate that one of the first sounds to echo through the halls of our new national cultural center was that of Moravian music—a sound that echos down two centuries of American life. How very appropriate that Sunday's concert, entitled "Dawn of Glory," was performed by faculty musicians of the North Carolina School of the Arts under the able direction of Nicholas Harsanyi. For these men and women work and live in the very shadow of historic Salem Square where John Frederick Peter served as pastor and produced some of the most lovely and moving anthems and chamber music pieces of the 18th century.

The names of those who were responsible for this moment of history are legion, and we are truly grateful for their perserverence in bringing this dream to reality. But I should like to pay singular tribute to seven special people who inspired this effort and kept it alive during months of comprehensive and painstaking planning. Those people are Mrs. Gordon Hanes, Mr. R. Arthur Spaugh, Mr. R. Phillip Hanes, Mrs. Paul Kolb, Mrs. Ira Julian, Mrs. Claude Strickland, Jr., and Mr. Roger Hall of Winston-Salem, N.C.

Perhaps Sunday's performance can best be summed up by quoting the words of Peter himself who 200 years ago wrote a warm and loving anthem in praise of the Saviour's grace. In his native German, Peter wrote, "Es ist ein kostlich Ding"—"It is a precious thing." "It is," indeed, "a precious thing."

PUBLIC LAND LAW REVIEW COMMISSION REPORT

HON. JOHN D. DINGELL

OF MICHIGAN

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. DINGELL. Mr. Speaker, pursuant to permission granted I insert into the CONGRESSIONAL RECORD an excellent commentary on the Public Land Law Review Commission's report sent me by Mr. Roland C. Clement, president of the National Audubon Society, which I believe merits inclusion in the CONGRESSIONAL RECORD at this point:

EDITORIALS

MARCH 10, 1971.

CONSERVATION COLLEAGUES: The following four editorial comments on the Public Land Law Review Commission's recent report will not be run in Audubon magazine during 1971.

We hope this advance copy of our drafts will prove interesting and helpful in your own examinations of the implications of the PLLRC report.

ROLAND C. CLEMENT,
National Audubon Society.

NEW YORK CITY.

1. ONE-THIRD OF THE NATION'S LAND

The Congress is no spontaneous generation chamber. Its lawmaking is much less national policy-making than trouble-shooting and plain regional privilege-seeking. When, therefore, the Public Land Law Review Commission was given its commission in 1964, Public Law 88-606 simply articulated the impatience of the Western States for more economic growth; and in a region where 48% of the landscape is in federal ownership, such growth can be most easily attained by "maximizing commodity production" on these same public lands. This is the task the Commission set itself, and this is what it cheerfully heard as "the will of the people" during five years of public hearings, a wide assortment of farmed-out research reports, and discussion sessions that cost over a million dollars a year for five years.

The Commission's conclusions and recommendations were issued in June, 1970 as a 342-page volume, One-Third of the Nation's Land. Before assessing this, however, let us look at another interesting political vehicle institutionalized by Congress: the public hearing. Whatever its original, town meeting justification, in practice the public hearing has become a device for reflecting the views of those who know what they want. In our country, industry groups best know what they want, are well-funded, and well-organized to lobby for what they want. More often than not, therefore, it is industry that speaks for the public at public hearings, since the general public is not organized, has diffused interests, and little understanding of the political mechanisms for pressing its needs where it counts. The Boston hearing of PLLRC, for example, was dominated by investment banking interests who told the Commission how important it was to transform all natural resources into economic

goods; the Washington, D.C., hearing was dominated by the mining industry's lobbyists; and timber and grazing interests who are the other beneficiaries of federal largesse in public land policy, held sway in most of the western hearings.

These hearings (seventeen in number) were also ideal settings for airing every local grudge against the public land management agencies, and this too was done. Even though the public lands are mostly the left-overs of our original public domain set aside to prevent a recurrence of the gutting of the Great Lakes pineries; or lands that no one wanted—deserts and mountains, or tax-reverted lands whose slow organic accumulations had been stripped off in a few decades of greedy overuse—our hold-over "rugged individualism" continues to bridle at any federal ownership of land. It is symptomatic of this commodity orientation, for example, that economist Milton Friedman still advocates that the National Parks should be a private enterprise.

Even so, something quite unforeseen by the advocates of turning the public lands to private production happened while the Commission deliberated. The Environmental Awareness Revolution came upon us, and the PLLRC probably felt its impact as much, or more, than anyone. Exploitation—necessary and appropriate, in moderation—became suspect because the public once again grew aware of the abuse that has characterized so much exploitation since the first public alarm created the conservation movement in Theodore Roosevelt's day. The public began demanding that Environmental Quality should at least be given equal status with Economic Growth. We are, in short, in that uneasy, half-aware state of wanting our cake but wishing to eat it, too. We are not sure how to do this, or whether it can be done at all, but we want to try. Chapter Four of the report is a formal acknowledgment of the potency of this new public will, an idealistic set of recommendations to take care of the environment. Unfortunately, too many other recommendations are in direct conflict with Chapter Four, as also our land-use habits, our statutes, and our narrow professionalism. But one has to start somewhere.

Expensive as it may seem, the Commission's review of our conflicting public land laws, overlapping agency responsibilities, and its recommendations, are a valuable crystallization of the Nation's problem in forging a better policy for the future than has guided our past. Sugar-coated and often half-hidden the problems nevertheless reveal themselves to a careful reading of the report; they alert us to hazards and needs, and for this we must be thankful. The Commission, history will probably conclude, came along little more than two years too late to implement its original concepts of public land use. The task of redefining needs has shifted to the environmentalists, who are today's more broadly, more people-oriented conservationists of yesteryear.

The conflicts and problems are many and real, but not insolvable. We need a truly national policy on land use, and the Congress and the Administration are both at last beginning to address this question. We would suggest to them that an intelligent policy will require contrasting truly national needs with those expressed by the regions, i.e., of recognizing the existence of low resource base (carrying capacity) in some regions, of oversaturation in others; and the need to set priorities to bring order out of threatening chaos. National policy requires an end to the piecemeal decision-making that now characterizes our water policy, our agricultural programs, our human welfare programs, and requires facing the ecosystem integrity questions that underlie so many of our assumptions about the carrying capacity of the planet itself. When the Commission disbanded on December 22, 1970, the curtain came down on what may be considered the first act in a new national drama. The characters have been introduced, the cues heard. The play will go on, and one hopes that the drama will unfold a constructive response.

2. TOWARD A NATIONAL TIMBER POLICY

Few resources areas have sparked more emotionally-charged controversy than the Nation's forests. Since most of the national forests are in the West, it is understandable that our colleagues of the Sierra Club, based in San Francisco, have taken the lead in questioning timber policy and opposing many of the emphases. They are not alone in this, however, even though Congressman Wayne Aspinall, chairman of the PLLRC, recently claimed that of all the national conservation groups, only the Sierra Club was critical of one-third of the nation's land.

With few exceptions, the defendants of current timber policy in both industry and the forest services have unfortunately often been quite paranoid in attempting to justify their stance while countering what they considered emotional criticisms. Ironically, also, although the government services have been under consistent attack from private enterprise forestry, they have, for the most part, made a common defense against outside critics. This is perhaps most easily explained by recalling that almost all forestry schools have been industry-oriented. Most professional foresters, therefore, still think in terms of timber harvest rather than of forest ecosystems.

The PLLRC's chapter on Timber Resources reflects this orthodoxy faithfully, viz.:

Regardless of the reasons why the Federal Government became by far the country's leading owner and manager of forest lands and timber, and regardless of the relevancy of these reasons to today's conditions, the facts are:

Federally-owned timber is vital to the wood economy of the country;

Federally-owned timber is vital to the economies of many communities;

Federal policies with respect to the sale of this timber can result in the life or death of firms that use it.

The federal Government's dominance as a supplier of timber will continue in the future.

This quotation reflects the distorted philosophy which led industry and government foresters to try to foist The Timber Supply Act of 1969 on an unwilling public. Both propositions are false because they disregard that "the wood economy" of the country is a minor fraction of the total economy, that wood is increasingly easily substituted for as a building material, and that this makes it less vital than its exploiters have presumed; because, traditionally, communities and firms which have depended on maximizing net returns from mature forests have been left derelict since this is a resource liquidation process; and because of what foresters call cutting rotations. Economic stability for the timber industry and its associated communities can come only from sustained yield operations that involve sufficiently rapid growth or extensive enough a cutting circle to maintain a forest-dependent economy. This is possible in pulpwood production, and for timber production where good soil, sun and abundant moisture make for rapid growth, and providing the firms and the communities do not overreach themselves. The PLLRC failed to see the conflict between the rigorously economic practices it advocated, and its desire to protect small firms and timber-dependent communities. This is a result of confusing the personal view of the economy—income and commodities—with economics as the social science of allocating scarce resources efficiently.

A breach of fresh insight was cast on forest policy in November. In a critique stimulated by a controversy over management practices in the Bitterroot National Forest, a Select Committee from the school of Forestry at the University of Montana, Missoula, reminded us that the central tenet of professional forestry, sustained yield timber management, was drawn from very different economic conditions prevailing in western Europe over a century ago. Because Germany and France then prohibited imports, they had created a self-imposed scarcity which warranted the application of the relatively more abundant resources of labor and capital to increasing the production of timber. Transferred to this country, where land is cheap relative to labor and capital, the forester's dogma was unfortunately applied unchanged, and "management" has unquestioningly been assumed to mean timber cutting.

The same Montana group drew an important distinction between "forest management" and "forest mining". "Mining", which deserves status as a technical term, is all timber cutting on sites that do not warrant the capital reinvestments that distinguish "forest management". In short, mining is the liquidation of natural surpluses that accrue too slowly to repay the opportunity costs of capital. The taking of such surpluses is warranted but it is just justifiable only under such conditions as leave the forest community relatively undisturbed, i.e., on a very selective cutting basis, no matter whether the forest is even-aged or not. The U.S. Forest Service currently classifies as "commercial timber land" all those areas capable of producing 25 cu. ft. of wood per acre per year. This figure is probably much too low. Indeed, we must now ask whether the government should not own all forest lands which do not warrant private management investments. In the Northeast, certainly, only state or federal ownership can protect the land long enough to allow it to recover from the abuse it suffered these last 300 years.

If we will accept these insights and redesign our national forest policy accordingly, the forest will first be valued in its own right—as the Earth's vegetative coat which graces the landscape, provides shade, shelter, oxygen; protects soil, helps water percolation, and furnishes the matrix for a living community; and, secondly for the commodities its surpluses may afford a prudent husbandry. Such a policy would be a proper denial of the PLLRC's dictum that "as national resources (the public lands) have little value unless their values are made available for the use of our people." It is obvious that "use" has a narrow connotation here. Forests always have ecologic utility; they may or may not have private economic value.

3. HOME ON THE RANGE

The only reason Americans eat more meat than other people is that they have plenty of land. Less fortunate people cannot afford the waste of grains involved in allowing stock animals to process cereals to meat. We are the only Nation that pays its citizens *not* to grow crops.

Federal agricultural price supports for crops, originally designed to stimulate production, now vainly seek to cushion the impact of too much productivity. Too successful, they now make the problem worse. Recently, the retiring president of the American Farm Bureau Federation expressed publicly what every student of American agriculture has known for a long time: price supports are not an agricultural program, but a form of economic relief for farmers caught in the squeeze of technological obsolescence. The tragedy is that most of the "relief" goes to the wealthy top producers, and that is costing us $5 billion when we plead poverty in helping the cities, education, and other essential public services.

Equally tragic is the fact that price sub-

sidies, by encouraging excessive production, depress the prices farmers get for their products and induce them to try to bring ever more land into production, draining prairie potholes essential to nesting waterfowl, clearing riverbottom swamps, and irrigating deserts. The "farm program" is destroying the diversity of America.

After the Civil War, little more than a century ago, the buffalo and the Plains Indians having been dispossessed, there began a great westward movement led by stockmen who came to exploit the great "commons" of grass on the plains, in the mountains, and in the subdeserts. A single generation saw the rise and fall of baronies built on free grass before homesteaders forced a partitioning of the land.

Europe's need for wheat during World War I induced us to rip open the grazing lands of the High Plains, and the price support programs instituted during the Great Depression of the 1930s finished the conversion to cropland. The depression is history but the price supports are still with us. Grazing became confined to the less productive lands, often with a small private holding in a favored valley dependent upon seasonal grazing on adjacent public land, perhaps in the high country of the National Forest, or in the semideserts controlled by the Bureau of Land Management. Small fees for such grazing were first imposed by the Forest Service in 1905, and by BLM in 1934. Attempts to bring these grazing fees into line with values rendered were beaten down by western Congressmen until 1971 when the first of a graded series of increases was implemented. The ranching community has tried persistently to assure itself statutory rights in the public lands it rents, and one third of the Nation's land pleads for a continuation of many of the privileges already accorded the stockman.

The prestigious Committee for Economic Development has estimated that the current federal price support system keeps some 20 million excess acres in crops—mostly wheat—that would be more efficiently used for grazing if the price supports were abandoned. Such a restoration of market efficiency to agriculture—in wheat and other crops—would save some $5 billion in taxes, though during the first few years the farm budget should be retained to help farmers make the transition via retraining programs, etc., since two million people would be involved. Such a policy shift would not only make American agriculture more efficient, but would have far-reaching implications for national land use policy. It would allow our taxes to be used constructively elsewhere. It would reduce the pressure on marginal lands by slowing cropland expansion. Increased livestock production on the more productive prairie lands would lower meat prices and make much public land grazing uneconomic, thus leaving these more fragile lands for wildlife and recreation. The current excuses for the federal predator control program would vanish, and here too more tax savings would result.

In the economic literature, when a reallocation of resources makes everyone better off, that nearly ideal circumstance is called a Pareto Optimum. The PLLRC failed to orient grazing as part of the larger agricultural policy problem. It therefore failed to see and propose the broader program suggested here.

4. HARD ROCKS, OIL, ETC.

"Our standard of living and our national defense are heavily dependent upon the availability of fuel and nonfuel minerals." In this opening sentence to the chapter on Mineral Resources in ONE THIRD OF THE NATION'S LAND, the Public Land Law Review Commission pinpoints both what is wrong with its outlook and what is wrong with national policy.

Current mineral policy, a tangle of legal complications, is based on three systems of exploitation: the original location-patent system that allows any prospector-explorer to establish claims wherever he may find minerals, so long as he has obtained a permit to explore, without paying the Nation for the resources he may eventually exploit. This is the wide open windfall system institutionalized under the Mining Law of 1872. In 1920 a Mineral Leasing system was superimposed whereby the exploiter pays a royalty for the resources extracted on public land. And more recently a Materials Disposal system was added to regulate the mining of gravel, sand, etc. The PLLRC report toys with the desirability of combining these systems into a single Mineral Leasing system, but eventually recommends the *status quo* with minor modifications.

Despite its powerful defenders, our national mining policy, most students agree, has been profligate in extraction, use, and in its environmental effects. So, of course, has been the "standard of living" built on this profligate extractive system. This could hardly be otherwise with the built-in obsolescence that characterizes industrial production, a level of consumption which is made possible only by exploiting the whole world for resources (⅓ of our minerals are imported), and a price system that disregards environmental costs. These flaws in our policy thus lead to premature resource exhaustion (through excessive extraction), to inefficiency in American industry (which is increasingly outcompeted abroad), and to a monstrous pollution problem. Lake Superior is being polluted by the taconite tailings of Reserve Mining Company's operations; thousands of streams have been made sterile by coal and other mine wastes; we have poisoned the air with sulfur because it seemed cheaper to mine it than to recover it from coal and oil used as fuels; lead, mercury, oil, PCBs, radioactive wastes, and other destructive materials have been spewed around the world; and current solid waste disposal loads and methods are destroying environmental diversity.

If, as the Commission says, minerals are relatively rare, this is of course exactly why we should stop wasting them; why we should constrain extraction in order to make recycling "economic"; and why built-in obsolescence should be recognized as the crime against human welfare it truly is. Like most resources in a highly evolved technological society, minerals are often substitutable one for the other, so there are many alternative ways of satisfying real needs. The bogey of national defense is a favorite smoke screen for protecting inefficiency privilege, or worse sins, but—our mistaken foreign adventures aside—the more important a mineral is to our future, the more we should hoard it and prevent its use in unimportant areas. Minerals, unlike trees, are non-renewable resources. All we can do is to use them prudently, and to recycle them.

It is in its discussion of Mineral Resources that the PLLRC's controversial "dominant use" concept becomes most arrogant. Because minerals are rare, it says, their extraction must be given dominance, and the mining industry must be given free access to the public lands! Economist M. M. Kelso of the University of Arizona has made the best comment on dominant use theory (in a new book by the Natural Resources Council of America, *What's Ahead For Our Public Lands*). It is, he writes, unsound economics because maximum public benefit will rarely be achieved by managing an area of public lands to the maximum degree for any single use. This is so because secondary uses will add more to the total benefit than the reduced (marginal) production they impose on a dominant use when a properly balanced (multiple use) program is the guiding policy.

The PLLRC recommends, again and again, that "the Federal government should rely on the private sector for mineral exploration," but we would reverse this and suggest that the Public Lands should be explored by government geologists—or under contracts let by the government—and exploitation allowed, again under contract by private firms, only when the Nation definitely needs the mineral involved. As is true of the controversial oil shales of the Colorado Plateau, private mining companies already own enough mineralized lands to supply a more conservative national economy. We should, then, abolish the Mining Law of 1872, and close all public lands to mining except as a National Materials Policy indicated real need, whereupon private firms should be allowed to bid for the privilege of extracting and selling the resource in the open market after having paid appropriate royalties.

ADDRESS BY MR. EDWARD P. MURPHY BEFORE THE GREATER BOSTON LABOR COUNCIL, AFL–CIO

HON. LOUISE DAY HICKS

OF MASSACHUSETTS

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mrs. HICKS of Massachusetts. Mr. Speaker, at the annual Labor Day breakfast of the Greater Boston Labor Council, AFL–CIO, held at the Statler Hilton Hotel in Boston, Mass., on Monday, September 6, 1971, Mr. Edward P. Murphy, secretary-treasurer of the Union Label and Service Trades Department, AFL–CIO, gave the following informative and enlightening speech to all present, which I would like very much to share with my colleagues in the house:

ADDRESS BY EDWARD P. MURPHY

On this Labor Day, we in the trade union movement face a more complicated set of problems than we've been up against for a long time.

We have an unemployment problem. We have an inflation problem. And now we have the problem of a "New Economic Policy" that nobody understands.

All we can be sure of, as George Meany says, is that this "New Economic Policy" wasn't intended to do the workingman any good.

These complications have even had an effect on the union label.

There was a time, not many years ago—we can all remember it—when the union label was a trade union issue, pure and simple.

A good union man not only worked union, he bought union.

The union label was the difference between goods that were made in an organized shop, under union conditions, and goods turned out by unorganized workers under non-union conditions.

That's still the issue—but it's not simple any more.

It's not just a trade union issue; it's a national issue. And it's getting more serious.

We still have battles to win against the goods produced in America by non-union and anti-union companies—by the runaway shops and the union-busters.

We still have, and we will always have, our unfair lists, our "Don't Patronize" lists, both local and national.

We're still a long way from winning all those battles; and of course, there will always be new ones. Yet on this Labor Day, in this very complicated year of 1971, we find ourselves wishing that these were the only battles we faced. The truth of the matter

is, they are the least of our problems. And I say that in the full knowledge that they are very important to us all.

These domestic battles are overshadowed today by a world struggle—a struggle that involves the job security of every wage-earner in America, organized and unorganized. It is a struggle to determine whether the goods America needs will be produced in America by American workers. And the outcome will decide whether the average American will be able to afford to buy the goods he needs.

If you think I am exaggerating, let me give you a few facts. Do you know that more than a third of all the shoes sold in the United States are made in countries where shoe workers earn 50¢ an hour or less? Many come from countries like Korea or Nationalist China, where the pay is 11¢ an hour.

Those shoes are only part—a small part—of a flood of imports amounting to 48 billion dollars a year. Not millions—billions.

Do you know that when it comes to consumer goods—household appliances and all the rest—you can really "be sure if it's Westinghouse"? What you can be sure of is that it wasn't made in America. The nation's second biggest electrical manufacturing company no longer makes any of its consumer products in the U.S.A.

I don't mean to single out Westinghouse. It is just doing what it always does—following the pattern set by General Electric. Brand names don't mean anything any more. They don't mean anything because American companies have invested their profits overseas, setting up factories to make goods for the American market.

Do you know by next year there won't be a single radio set made in this country? Do you know only a handful of TV sets are made here now? The rest are produced in foreign countries but selling under the familiar American trade names.

Or look at the auto industry. We all know where Volkswagens are made. There's no secret about that. And the same goes for Toyotas and Datsuns. But wait. General Motors sells a car called the Opel. Buick dealers handle it. It's just as German as the VW. Chrysler has a new little car called the Cricket. You must have seen the ads—and heard the song—on television. The ads say "Chrysler designed, Chrysler engineered." That's not what the ads say in England. In England the same car is called a Hillman. That's where it's made—in the Hillman factory. When they bring it over here they put a different nameplate on it.

Chrysler has another car called the Colt. That one's made in Japan. And what about the Pinto? Sure, it's a Ford. But so far, the engines are made in the Ford plant in England. To be fair about it, Ford is building a Pinto engine plant in this country. My guess is that Mr. Ford thinks that Americans are getting sick of all the imports; he wants to be ready with an all-American entry in the small car field.

But Ford and the other members of the Big Three, General Motors and Chrysler, all have solid connections with Japanese car manufacturers. It's still possible that in a few years all our cars may be the way so many other products are right now—an American name on the front, with Japanese works underneath.

Now we in the Union Label and Service Trades Department don't make policy for the AFL–CIO. We know that foreign trade is a complicated affair. We know that our country has to buy and sell goods in the world market. And we will leave it to our own experts, our own trade union economists, to figure out how this can be done on a fair and reasonable basis. But we also know something else. We know that the kind of foreign trade that's taking place today is not fair and reasonable. We know it is taking tens of thousands of jobs away from American workers—from American union members—and shipping them overseas.

You people here in New England don't need to hear this from me. You were among the first to be hurt and you are among the hardest hit.

You know what happened to your textile mills and your shoe factories—as though the anti-union south hadn't hurt enough. You know about watches and electrical goods, and all the rest. And you know that adjustment assistance, as they call it, is no substitute for a job.

Speaking of substitutes, now we have another one—the 10% surtax. There's an old expression that fits it—too little and too late.

And so we say this: Under these circumstances, there's only one sensible course for American trade unionists to take—Buy American.

And there is only one way, in these times, to be sure of buying American—and that is to buy union, by demanding the union label. It's not enough for a product to carry a familiar American name, or a brand that is a household word. You can't be sure unless it carries an American label—a union label. This is the message we must spread among our members, and among their wives and children—the 40 million or more consumers who belong to AFL–CIO families. And we must spread it among our friends and neighbors, among the professional people, the self-employed and all the rest, who aren't union members. Because today, it is their struggle as much as ours. We say to everyone who works in America, everyone who depends upon American wages: Help our country, help yourself in these troubled times; buy union and you will re-build America!

FINANCIAL STATEMENT BY WILLIAM E. FRENZEL, FOR U.S. CONGRESS VOLUNTEER COMMITTEE

HON. BILL FRENZEL

OF MINNESOTA

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. FRENZEL. Mr. Speaker, this week, two committees of this House will probably begin markup sessions on election reform bills. An important question before each committee is that of possible restrictions on campaign spending.

Like all Members, I have previously certified my personal expenditures per the Federal law. At this point in the RECORD I would like to insert, in addition, the financial statement made by my volunteer committee and filed, per Minnesota law, with the Minnesota secretary of state:

STATE OF MINNESOTA, DEPARTMENT OF STATE

I, Arlen I. Erdahl, Secretary of State of the State of Minnesota, do hereby certify that I have compared the annexed copy with record of the original filing in my office of Financial Statement by William E. Frenzel, for United States Congress Volunteer Committee, dated December 3, 1970, and that said copy is a true and correct transcript of said filing and of the whole thereof.

In testimony whereof I have hereunto set my hand and affixed the Great Seal of the State, at the Capitol in St. Paul, this 8th day of September A.D. 1971.

ARLEN I. ERDAHL,
Secretary of State.

WILLIAM E. FRENZEL FOR U.S. CONGRESS VOLUNTEER COMMITTEE

I, John G. Lindell, hereby state that I am Treasurer of the above named committee, and that said Committee received a total of $144,325.44 in contributions through December 2, 1970. A total of $144,155.21 of said sum was expended for travel, meals, transportation, printing, postage, mailing, advertising, personnel fees, rent, telephone, utilities, and miscellaneous expenses as of the aforementioned date.

Dated: December 3, 1970.

JOHN G. LINDELL,
Treasurer.

CRIME STATISTICS

HON. MICHAEL HARRINGTON

OF MASSACHUSETTS

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. HARRINGTON. Mr. Speaker, during the last presidential campaign, John N. Mitchell was President Nixon's campaign manager. And during that campaign, the voters were frequently told about the rise in crime during the Democratic administrations. Crime was so bad, candidate Nixon said, that if he were President, he would fire Attorney General Ramsey Clark. As a Republican, I never expected President Nixon to make Attorney General Clark part of his cabinet—even though Clark was one of the best and most humane Attorneys General ever to serve.

But all this brings me back to Mr. Mitchell, our present Attorney General. It seems that he is still following the path of political expediency.

Last week, an article by Fred P. Graham in the New York Times detailed how Mitchell's office has manipulated crime figures to make the administration look good. The manipulation is done through percentages which show the rate of increase in serious crime for 1970 up 11.3 percent, down seven-tenths of a percent. This statistic is touted as showing that although crime is up, it is rising slower than before. Using that same statistic, it looks like 1970 was the best year, with one exception, since 1964.

But looking at another statistic, the numerical increase, a different story appears. As the Washington Post noted in an editorial in Saturday's paper, 1970 was also the year when numerically, crime showed the highest increase over the preceding year, and that the increase in the last 2 years has been greater than the increases in 1965, 1966, and 1967 combined.

Crime was an issue in 1968. It still is. People do not feel safer walking streets at night with a Republican President. We need to lower the crime rate, but rhetoric will not do that. We need a system of justice free of court tangles. We need a system of justice where police are equipped with the education to handle the increasingly difficult job we ask them to perform. We need a system of justice where the root causes are dealt with. Crime is a symptom of a disease which requires preventive medicine, not preventive detention. Using crime figures to distort the issue for expediency is wrong. For that reason, I am inserting the New York Times article and the editorial from the Washington Post for my colleagues:

[From the New York Times, Sept. 8, 1971]

MITCHELL AND HOOVER: FOCUS DIFFERS ON CRIME DATA

(By Fred P. Graham)

WASHINGTON, September 7.—For the last year, the office of Attorney General John N. Mitchell has been rewriting the Federal Bureau of Investigation's interpretations of the nation's crime statistics, which for four decades had been within the sole control of J. Edgar Hoover.

As a result of the interpretations placed on the crime situation by Mr. Mitchell's public relations staff, it has been made to appear that the F.B.I. believes the crime rise that began under a Democratic administration almost a decade ago is tapering off.

The figures, however, show that reported crime is rising at about the same velocity as before.

Mr. Mitchell's efforts with the crime figures are in line with the Nixon Administration's law-and-order political strategy. President Nixon won office in 1968 on a campaign of criticism of the high crime rates under the Democrats, coupled with promises to do better.

The Federal Bureau of Investigation has often been accused of presenting crime figures in a way that emphasizes the crime increases, supposedly because this will justify larger F.B.I. budgets. Attorneys General before Mr. Mitchell have tended to stress what good news could be found in the figures, as if to say that Justice Department programs were succeeding.

UNIFORM CRIME REPORTS

Documents have come to light illustrating how the Attorney General began last June to change the interpretation placed on the crime figures without altering the figures themselves or omitting crucial statistics.

The F.B.I. Uniform Crime Reports are compilations of local police departments' statistics on crimes reported to them. Each year, the bureau issues the figures in four quarterly reports and an annual report.

The reports are presented in virtually impenetrable form, consisting of tables of figures plus some explanatory passages. So the public's impression of what the figures show is largely influenced by a press statement that is always issued on F.B.I. stationery with the reports.

Ever since the bureau began releasing crime figures in 1933, Mr. Hoover, the director, has drafted the statements to explain the figures. This changed last June 22, when Mr. Hoover's office prepared a statement, under his letterhead, that characterized the statistics to be released that day as follows:

"For release Monday P.M. June 22, 1970—according to figures made available through the F.B.I.'s Uniform Crime Reports and released by Attorney General John N. Mitchell, serious crime in the United States continued its upward trend, recording a 13 per cent rise nationally for the first three months in 1970 when compared to the same period in 1969."

ANOTHER VERSION

The Statement, rewritten in Mr. Mitchell's office, and as it was actually issued under Mr. Hoover's letterhead, began as follows:

"For release Monday P.M., June 22, 1970—Attorney General John N. Mitchell announced today that the F.B.I.'s Uniform Crime Reports show that the rate of increase of violent crimes in the first three months of 1970 slowed by 7 per cent in the major cities of the nation—and by 3 per cent in the nation as a whole."

It was not until the third paragraph of Mr. Mitchell's release that it was disclosed crime had risen by 13 per cent.

Since then, each release of F.B.I. figures has revealed a difference in tone between the explanatory material written by the bureau and printed in the crime reports themselves, and the statement authorized by Mr. Mitchell and published under the F.B.I. letterhead.

The bureau's explanation invariably stated how much reported crime had risen. Mr. Mitchell's accompanying statement began with a passage that explained how the crime rise had slowed in certain respects.

The difference between Mr. Hoover's view and Mr. Mitchell's view of the crime figures came into sharp focus last week when the annual figures for 1970 were released. They showed that, in the two years since the Republicans took office, reports of major crimes have risen from 4.4 million in 1968 to 5.5 million last year—a rise of 25 per cent. The crime rate has also risen, but not as rapidly—from 2,235 reported major crimes per 100,000 United States residents in 1968 to 2,741 per 100,000 in 1970.

EXPLANATION MATERIAL

The explanatory material written by the F.B.I. in the report said that reported crime increased by 11 per cent in 1970 over 1969, and that it rose by 144 per cent since 1960. "The risk of becoming a victim of crime in this country is increasing," it concluded, and "population growth cannot alone account for the crime increases."

When the figures were released on Tuesday, some news reports said that crime was rising, others said that it was "tapering off," and others quoted Mr. Hoover as having said that the risk of being a crime victim was rising, and then quoted Mr. Mitchell's statement that the crime rise was slowing down.

Commenting in response to questions about the revisions of the release, Jack W. Hushen, a Justice Department spokesman said:

"Press releases come up to us from various divisions and we are continually changing things, putting emphasis on more newsworthy items and significant points that we find have been overlooked.

"What they send us is a proposed press release. We review them to see that they are set in the proper context. I can show you a lot that have been rewritten a lot more than that. After all, these are reports put out under the Attorney General's name."

Spokesmen for the F.B.I. and Mr. Mitchell's office said that the releases were being handled as always, with the Attorney General's office giving final approval to the press statements. Comparisons between the F.B.I.'s explanatory material and the press statements of past years make it clear that only in Mr. Mitchell's tenure has Mr. Hoover's copy been edited.

A MATTER OF STRESS

In no case has Mr. Mitchell's statements changed the figures or omitted crucial statistics. But he has stressed certain figures that tend to show that the crime picture has improved under the Nixon Administration, and the pattern seems clear enough by now to establish that the Republican candidates will probably stress certain points in discussing crime.

One is the "rate-of-increase" argument. It points out that, while the volume of reported crime was 11 per cent higher in 1970 than 1969, and 12 per cent higher in 1969 than 1968, this is a slower rate of increase than in 1968, when it rose 17 per cent over 1967, and 1967, when it rose 16 per cent over 1966.

Statisticians say that there is some validity to this argument, but that it also contains a built-in distortion because, as the volume grows, the rate of increase usually shrinks. They cite the following example:

If there were one million crimes in 1968, two million crimes in 1970, crime would have increased by 100 per cent in 1969, but by only 50 per cent in 1970. It could thus be said that the rate of crime increase had been cut in half in 1970.

[From the Washington Post, Sept. 11, 1971]

THE ATTORNEY GENERAL AND CRIME

Each year about this time, it becomes necessary to try to take out some of the political spin that the Department of Justice under Attorney General Mitchell has imparted to the FBI's annual crime report. This year, we regret to say, is no different from the last two. Mr. Mitchell and the department have demonstrated again their ability to find the golden lining in a dark cloud.

Take, for instance, the press release accompanying the FBI's report. Its first paragraph said, "Serious crime in the nation continued to increase in 1970, Attorney General John N. Mitchell announced today, but at a slower rate than in 1969. It marked the second year in a row that the crime statistics showed a tapering off of the sharp upward swing recorded during the mid 1960s." This claim is based on the undisputed fact that the *rate of increase in serious crime* was 11.3 per cent in 1970—a rate lower than the rate of increase in 1969, 1968, 1967, 1966, and 1964. But if you look at the figures in another way, the impression conveyed is quite different. It is equally fair to write that the *numerical increase in serious crime* in 1970 over 1969 was the second highest in the nation's history and that the increase in the last two years has been greater than the increases in 1965, 1966 and 1967 combined. That is based on the undisputed numbers reported by the FBI. The following table may make this clearer—it lists the so-called index crimes reported to the FBI for each calendar year, the increase in each year's total over the preceding year, and the rate of increase (the figure Mr. Mitchell likes to talk about):

	Index crimes	Numerical increase	Rate of increase (percent)
1970	5,568,200	566,700	11.3
1969	5,001,400	534,800	12.0
1968	4,466,600	664,300	13.8
1967	3,802,300	538,000	16.5
1966	3,264,200	334,000	11.4
1965	2,930,200	175,200	6.4
1964	2,755,000	319,100	13.1

The rate of increase figures do give the illusion of statistical progress against crime; when the number of crimes goes from three to four million, for example, the rate of increase is 33 per cent; when the number moves from four to five million, the rate of increase is only 25 per cent. That's what Mr. Mitchell would call "progress." But the numerical increase from one year to another in both instances is still one million crimes—and for the one million victims, there is not much comfort in the thought that the rate of increase is decreasing. By our way of looking at it, even the fact of constant, continuing increase of, say, a half million in the number of crimes every year is difficult to translate into "progress," and an actual increase in the number of additional crimes each year, which is what happened between 1969 and 1970, can only be put down as retrogression if we are going to face the facts honestly.

There is a second example this year of how Mr. Mitchell lets rhetoric outrun facts. He told a meeting of law-enforcement officers Thursday that the monumental effort of local and state police in the last couple of years has resulted in fear "being swept from the streets of some—though not all—American cities." We suspect that the average person would believe, upon reading that statement, that American cities are safer today than they were when the Nixon administration took office. Yet in only two of the 25 largest cities—Pittsburgh and Baltimore—was there less serious crime, according to the FBI report, in 1970 than there was in 1968. In 16 of those cities, the serious crimes reported in-

creased more than 20 per cent between those two years. If you measure only crimes of violence—murder, rape, robbery and assault—two of the 25 cities showed a decrease (Seattle and Milwaukee) and 16 showed an increase of more than 20 per cent. These figures lead to only two possible conclusions if Mr. Mitchell is right and fear is being swept from the streets: either the fear in 1968 was created by the words of the man whose campaign he managed, not by the facts, or people now have a false sense of security.

We have gone through this exercise in numbers not to paint the picture blacker than it is nor to discourage the law-enforcement personnel from trying harder but in an attempt to keep the record reasonably straight. There was a crime problem in 1968. There is a worse crime problem now. In some places, like the District of Columbia, the situation has improved within the last year. In others, it has deteriorated. (Remember how the administration talked about New York City a year ago when it showed a slight drop in crime? Nothing has been said about the 8 per cent increase this year.) One of those crimes of the sort that make up the FBI's annual survey was reported for every 45 citizens two years ago and one for every 36 citizens last year. We find it difficult to believe anyone thinks that is an improvement.

READING ABILITY

HON. JACK BRINKLEY

OF GEORGIA

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. BRINKLEY. Mr. Speaker, the excellence of a letter I have just received from Mr. W. R. Giddings enclosing a copy of his letter to the President with the attached editorial from WDAK radio, merit the close attention of the House of Representatives. My joint resolution, House Joint Resolution 43, reintroduced on January 22 of this year, meets the formula this good citizen recommends. It provides that—

The involuntary busing of any student to a school or the required attendance of any student at a school outside the student's local school zone for the purpose of achieving racial balances or quotas is prohibited.

May I commend all of this to the membership and in particular the last sentence of Mr. Giddings' letter which evidences penetrating perception.

The two letters and editorial follow:

COLUMBUS, GA.,
September 10, 1971.

Hon. JACK BRINKLEY,
House of Representatives,
Washington, D.C.

DEAR CONGRESSMAN BRINKLEY: Although you are an extremely busy man, you have the reputation of listening to us common folk. Therefore, I would like to pass on to you some of my thoughts and comments.

First of all, I never thought I would see the day that this great country of ours would take away the rights of its citizens which are guaranteed by the Constitution. But, the recent events here in Columbus, Georgia, have conclusively proven to me that the Federal bureaucracy has effectively reduced the rights of the U.S. citizen to a level that is no better than that of a citizen under a totalitarian type government.

This week, I have been informed by the Muscogee County School Board that my child cannot be admitted to the school of his choice simply because of the color of his skin. If I understand it correctly, this same thing has happened to your child. *How can this be justified and enforced by the courts?* The inequities that have been forced upon the citizens of this country by the Supreme Court rulings are far too numerous to repeat in this letter, besides, I am sure you are aware of most of them. Locally, there are many problems to be resolved which, though you may be concerned, are outside of your area of responsibility. However, I, along with many other concerned parents in Muscogee County, specifically ask your support and urge you to present legislation to prohibit forced busing merely for the sake of achieving racial balance. In addition, I ask that you use all the powers of your office to bring back equity and the civil rights of all people in this country so that it will continue to represent liberty, justice and equality for all.

I am enclosing a copy of an editorial which I received from one of the local radio stations, WDAK. I believe this expresses the feelings of most of the people in our country today. Hopefully, you will be able to use the example cited to help restore the quality of education to a reasonable level and prevent the courts from playing games with our schools and our children.

In conclusion, I would like to correct the image of the local dissenters that the news media has attempted to project. All opponents to fixed racial balance in our schools which can only be achieved by forced busing are not racists. I was born in the North, educated in desegregated schools in the North, lived among and worked with all races. None of my children have racial problems (except those promulgated by the local school board). I work for the Government where, rightfully, we do not discriminate against race, creed or color. I am sure that the majority of other local citizens who are now protesting the mass busing of school children are no more racists than I am. We just find it hard to believe that the courts of our land practice and enforce racism.

Sincerely yours,

W. R. GIDDINGS.

COLUMBUS, GA.,
September 10, 1971.

The PRESIDENT,
The White House,
Washington, D.C.

DEAR MR. PRESIDENT: Although you probably will never see this letter, I am sure someone on your staff will file some of my thoughts and comments in the statistical computer which you use to feel the pulse of the populace.

First of all, I never thought I would see the day that this great country of ours would take away the rights of its citizens which are guaranteed by the Constitution. But, the recent events here in Columbus, Georgia, have conclusively proven to me that the Federal bureaucracy has effectively reduced the rights of the U.S. citizen to a level that is no better than that of a citizen under a totalitarian type government.

The first fifty years of my life, I resided in the Northern part of our country and have spent the last five years in Columbus, Georgia. It is indeed revealing to see the difference in application of federal laws in the northern states and in the southern states. While living in Michigan, I was constantly reminded of the fact that, although the Civil War was over, prejudiced southerners were still maintaining racial segregation. Recent events have proved what your Vice President has been saying all along—that the news media definitely distorts facts. Southern citizens are way ahead of people in northern cities in their acceptance of racial equality. Even though many of them don't agree with this policy, nonetheless, they practice it.

If citizens were permitted to run their affairs without the constant interference of the Federal Government, the situation we all desire, of racial harmony, would surely be attained. Today, one of the clearest examples of governmental interference is that practice by the Federal bureaucracy—supposedly under orders of the United States Supreme Court—to segregate all schools in the nation to achieve racial balance.

This week, I have been advised by the Muscogee County School Board that my child cannot attend the school of his choice simply because of the color of his skin. How can this be justified and enforced by the courts when our Constitution guarantees all citizens their civil rights, regardless of race, creed or color. This one incident has been multiplied thousands of times throughout the country and is a direct result of governmental meddling in the school system. School boards throughout the country can no longer devote their time and resources to educating our children because they must spend most of their time fighting legal battles which insist upon racial balance of students and teachers with no regard whatsoever to education. I, along with a lot of other citizens of this great country of ours, believe this tragic upheaval of our educational system is far more serious than some of the wars we have engaged in.

How can our children, who will be running the country in a few years, cope with its complexities without the necessary education? A country cannot survive without intelligent, educated leaders. Where will we get competent leaders twenty years from now if we stand by and allow our schools to be destroyed? I am enclosing a copy of an editorial which I received from a local radio station, WDAK, that I believe expresses the feelings of most people in this country far better than I can. Hopefully the example cited will help to restore the quality of education to a reasonable level and prevent the courts from playing games with our schools and our children.

In conclusion, I beg you to use every power and avenue of action available to you to correct this appalling injustice being forced upon the citizens of the United States which can lead to the destruction of our country through the lack of educated people to govern it.

Respectfully,

W. R. GIDDINGS.

[Special editorial, WDAK radio, Columbus, Ga., September 8, 1971]

BIG JOHNNY REB

The State of Virginia's school authorities didn't want to release the information—in fact, they fought like tigers against it—but the news is finally out in Richmond that the quality of public education in the Old Dominion has been slipping and sliding steadily since the federal bureaucrats moved in and took over. Every state supposedly runs regular tests to measure the learning achievements of its children. The controversial report concerning school children in the State of Virginia discloses that there has been an appalling drop in reading ability. Indeed, in those areas where the forced integration impact has been greatest, *seventh* grade children tested out to have a reading ability at the *fourth* grade level.

Not surprisingly, Virginia officials, from the Governor on down, are saying that a crisis situation is at hand. What everybody is talking about is the result of the real crisis—the crisis that began when the federal government began taking control of the schools built, owned and operated by the states and local communities.

The test results demonstrate, ironically, that it has not been merely white students whose reading ability has been seriously diminished. The black children—the ones whom the political sociologists promised

would be helped—are dropping far behind their previous level also. So, in a word, everybody's the loser.

It's really not surprising. Virginia's schools, like schools everywhere else, have been plagued by disruption, violence and student strikes, all calculated to reduce the level of efficient teaching. Moreover, like everywhere else, Virginia has been forced to swallow forced busing. Children are tired and hostile by the time they reach the schoolhouse each morning; they are in no mental or emotional condition to learn. So . . . who cares about reading, writing, and arithmetic? Yet, there are some federal judges who apparently intend to press on with wild demands for percentage enrollments. It may be that President Nixon has managed to tone down the Department of HEW—for the time being. The federal judges are something else again.

Out in Indiana, there's a federal judge who is threatening to consolidate seven separate county school systems in order that he may order forced busing from the seven counties into a city whose school enrollment happens to be predominantly black. The same notion has been proposed for Washington, D.C., where 90 per cent of all the public school children are black. The idea is being kicked around to bus tens of thousands of children from Maryland and Virginia *into* Washington, and an equal number of black children *from* Washington to schools in Virginia and Maryland. The point, of course, is: What is happening to the children as a result of such manipulation by federal bureaucrats and judges? The test results from Virginia's school children tell the story. The *children* are being harmed, permanently and perhaps irreparably—and all because federal bureaucrats and politicians and judges have been obsessed with integration at the expense of education, and have therefore chosen to use the law for purposes for which the law was never written. It is a strange record of stewardship.

EXPORT FINANCE ACT AND THE WYLIE AMENDMENT

HON. JOHN E. HUNT

OF NEW JERSEY

IN THE HOUSE OF REPRESENTATIVES

Friday, September 10, 1971

Mr. HUNT. Mr. Speaker, recently the House passed a bill to extend the life of the Export-Import Bank of the United States. My distinguished colleague from Ohio, the Honorable CHALMERS P. WYLIE, offered an amendment which would prohibit the Bank from extending loans to countries in which the United States is involved in armed conflict. As a result of Mr. WYLIE'S efforts, WTVN radio and WTVN-TV in Columbus, Ohio, presented the following editorial which I commend to my colleagues:

EDITORIAL

Central Ohio Congressman Chalmers Wylie recently put up a valiant fight on the floor of the House against a portion of a bill on the Export Finance Act of 1971. The bill gave continued life to the Export-Import Bank of the United States.

Congressman Wylie fought to add an amendment to the bill that would terminate the possibility of any export-import bank financing of trade with those nations which might be trading with other nations engaged in combat with this country. In other words, he was saying that American money should not be used to ultimately supply our enemies with weapons that could be used to kill American fighting men.

But, for some strange reason, his amendment was defeated. The bill was passed and now the President has the authority to approve the loans.

However, letters from you might convince the President to follow Congressman Wylie's philosophy on the export-import loans. And we applaud Congressman Wylie for his dedicated and patriotic effort.

FIRST TERM CONGRESSMAN ON THE JOB

HON. DAN KUYKENDALL

OF TENNESSEE

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr KUYKENDALL. Mr. Speaker, it is with great pleasure that I call to the attention of the House an article which appeared recently in the Harding College Bulletin. This article highlights the activities of the last 2 years of Tennessee's Third District Congressman, LAMAR BAKER. This article is a fine tribute to my conscientious colleague from east Tennessee.

FIRST TERM CONGRESSMAN ON THE JOB

(By David C. Crouch)

The rising hum of activity was clearly audible as the 435 representatives of the 92nd Congress assembled in the House chamber for the opening ceremonies of the first session. Bipartisan greetings between the representatives were evident, and legislators, who in the coming months would square off in legislative confrontation, appeared quite jovial.

The increasing rumble of voices and the rustling of paper by page boys beginning their task of daily distributing bills and copies of the legislative calendar were suddenly silenced by the resounding echo of Speaker Carl Albert's gravel as he called the first session to order.

For 48 freshmen representatives, two years of perpetual motion had begun. The sound of the gavel had ended the welcome rest after the November elections and had initiated the seemingly endless committee meetings, general House sessions, personal appearances and routine daily appointments that crowd a congressman's schedule. Somewhere among the throng gathered in the House chamber sat E. LaMar Baker, the newest member of the Tennessee congressional delegation.

More than six months after this eventful moment the freshman representative appears to have mastered "the most hectic personal schedule" he had ever encountered and has begun the "most tremendously challenging task" of his career.

The first term in the House of Representatives is often considered to be one of the most unique learning situations a new Congressman will ever experience. His position as low man on the seniority totem pole provides an additional incentive for developing a keen sense of legislative priorities and is conductive to party loyalty. Many varied descriptions of that first term have been heard on Capitol Hill and Congressman Baker has his own synonym for these unique experiences.

"I would describe my freshman year as a jigsaw puzzle. After you have enough of the pieces in the right places you begin to know what the entire picture will look like as soon as all the pieces are fitted into place. That first experience with the national legislative body is a puzzle that must be solved," he noted.

A 1942 Harding graduate, Congressman Baker came to the United States House of Representatives with a wide variety of political experience. He ascended the political ladder from precinct worker to county chairman to state legislator and finally to his present position in a span of ten years. In 1966 he won a seat in the Tennessee House of Representatives and two years later he served as a state senator.

He pointed out that it was a big step from the floor of the Tennessee Senate in Nashville to the Congress of the United States, but his background in state legislative proceedings has been a big asset in his work on Capitol Hill. With more than one-fourth of his term already gone he admitted that he had learned a "tremendous amount about the procedures of national government."

"There is no limit to how much of the 'action' a freshman congressman can have, but I would consider it the better part of wisdom to know what you are doing before you get too deeply involved in the legislative mill. If you are not careful, you might hamper yourself in the future by being too aggressive as a freshman," he noted.

The new congressman was a part of a Republican wave that swept across the state of Tennessee during the 1970 elections. The native of Chattanooga polled 51 percent of the votes to win the third congressional district race over his Democratic opponent. Republican Bill Brock, former third district representative, defeated incumbent Albert Gore in the race for the senate seat and Winfield Dunn became the first Republican in 50 years to win the governor's seat in Tennessee.

The third congressional district is a compact group of ten counties in the southeastern portion of the state. Nestled around the winding Tennessee River, the district is a hub of activity for the Tennessee Valley Authority. For this reason, Representative Baker asked to be assigned to the Public Works Committee of the House. "I am the only Tennessean on the committee. I think it is proper for a Tennessee representative to be on this committee because of the work of TVA and the effect it has on this particular district and also many other districts of this state."

Congressman Baker considers his office as a unique bridge between his constituency and various agencies of the federal government. Fifty per cent of the job of a good congressman is the office service he and his staff perform. The office of the representative should be a citizen's "best information service." He pointed out that his office daily handles questions concerning social security, military status, veterans' benefits, passports, tax problems and various other inquiries about other aspects of federal government.

On the other side of the coin, the actual legislative process consumes the other half of a congressman's schedule. Sometime during any 24-hour period he attempts to study pending bills to determine a priority for each particular piece of legislation. A staff of 12 assistants helps review and compile national and local opinions on all pending bills.

As a member of the minority party Congressman Baker sees his job as no different from that of any other congressman. "Contrary to popular belief, party affiliation is not everything. Each congressman was elected to represent his district and the best interests of the nation. A representative is obligated to vote according to the best interests of his constituency. Whether he is a Democrat or a Republican, he should respond to these interests. Being a Republican, I naturally try to follow President Nixon's program with some reservations, of course, as to what is best for the third district."

"Keeping in touch" with the folks back home sometimes turns the representative's work into hours of analyzing editorials, letters to the editor, letters from constituents and replies to questionnaires concerning major bills pending before the House. Public opinion is a powerful force in a democratic

society and representatives have found that a forgotten constituency sometimes forgets to re-elect an incumbent on election day.

The rapid-pace schedule of Washington does not elude Representative Baker on his frequent trips to Chattanooga. In addition to his regular office duties, he is owner and president of Commercial Janitors, Inc., and Floormaster Rug Cleaning Company of Chattanooga. He serves as an elder of the St. Elmo Church of Christ and is a member of the American Legion, the Chattanooga Civitan Club and the Chamber of Commerce.

Adaptability has become the key word to describe the congressman's freshman year. "The only adjustment that must be made involves basic temperament, and I think I have adapted to my new schedule. You find yourself stopping in the middle of one task in order to begin or complete another task. However, considering all things, when you ask for something and work hard to achieve it, you appreciate your job."

Noting that his family would prefer to be at home in Chattanooga, he indicated they too had "adapted" to life in Washington. He and his wife, Sue, maintain a residence in Washington in addition to the family home in Chattanooga. Their daughter, Susan, is a freshman at David Lipscomb College and their son, Edward, is a medical student at Baylor University.

Characteristic of most politicians, LaMar Baker is already casting an eye toward the 1972 elections. With less than half his freshman term completed he smilingly described the life of an elected representative as a "disease" and commented that barring ill health he plans to seek re-election in 1972.

PRISONERS AND MISSING

HON. CLARENCE E. MILLER

OF OHIO

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. MILLER of Ohio. Mr. Speaker, at the request of my colleague from Indiana, the Honorable ROGER ZION, I insert the following:

Mr. Speaker, seven years, one hundred and seventy-one days ago, Captain Floyd Thompson was captured in South Vietnam and subsequently became America's first prisoner of war in Southeast Asia. In addition to Captain Thompson, more than 1600 Americans are now listed as either captured or missing in Southeast Asia. And while they wait in the POW compounds of Hanoi or the makeshift bamboo cages of the Viet Cong, the search for an honorable peace goes on.

Thanks to millions of concerned Americans who have decried the callousness of North Vietnam, we have seen some shift during recent years in the official Communist attitude regarding the prisoners. The flow of mail has increased, propaganda movies have filtered out of North Vietnam and an occasional visit by Westerners have indicated that Hanoi has heard our protest loud and clear.

One fact remains clear: any settlement of the conflict in Southeast Asia must include the safe return and full accountability of the prisoners and missing. For whatever else this nation does in Indochina, we must place the highest priority of the POW/MIA issue. Captain Thompson and hundreds of his fellow servicemen interned or missing in Indochina have waited helplessly for a solution that will send them home. They are counting on us, just as we once called upon them, to resolve this impasse as promptly as possible.

WHEN GUNS ARE OUTLAWED, ONLY OUTLAWS WILL HAVE GUNS

HON. JOHN G. SCHMITZ

OF CALIFORNIA

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. SCHMITZ. Mr. Speaker, some slogans obscure the truth, while others clarify it. The familiar, punchy statement just quoted is an excellent example of a slogan that clarifies and points up a vitally important fact.

It should be obvious that a man intending to commit a crime with a gun is not likely to be deterred from doing so because it is also a crime to have a gun. He may be deterred if there is a much stiffer penalty upon conviction of a crime committed with a gun, and a reasonable prospect of his apprehension, conviction and the infliction of this stiffer penalty upon him. But he is not much more likely to worry about laws against illegal possession of a firearm in this situation than about accumulating parking tickets.

Nor will gun control laws prevent such a criminal from obtaining the weapon needed for his crime. If a gun is essential, he will obtain it outside the law; if not, he will use some other weapon, perhaps more bloody, but just as final.

His law-abiding victim, on the other hand, will be disarmed.

Our first line of defense against crime is our local police, just as our first line of defense against enemy attack are our national armed forces. But first lines of defense become much stronger and more effective when backed up by adequate reserves. Citizens capable of and willing to defend themselves are the reserves in the fight against crime. They make the task of the police easier and that of the criminal harder. Such citizens also give pause to foreign aggressors or homegrown would-be tyrants who might seek to deprive us of our liberties by force.

The ability of the Swiss people to defend themselves, with one or more firearms in almost every home, helped keep Switzerland free during World War II when it was entirely surrounded by Nazi Germany and its allies. When Hitler seemed ready to invade England in 1940, it was discovered that because of the tight English gun control laws, the people had almost no ability to resist on their own should the invasion come, for lack of suitable weapons. Enemy airmen parachuting down in some cases had to be captured with nothing better than pitchforks. In that moment of crisis, it was too late to do anything to remedy this lack.

Yet the agitation for the forcible disarming of law-abiding American citizens never ceases, despite the explicit guarantee in the Constitution of their right to keep and bear arms. Much is made of the fact that this provision of the Bill of Rights is introduced by a clause referring to militia. We are told that because we have no organized body today called a militia, this guarantee of our rights no longer applies. But a militia in essence simply consists of law-abiding citizens, still living at home, who are prepared to defend their country when necessary by force of arms. It does not always have to be established in organized units, but may remain a potential reserve available in time of crisis—if the right to keep and bear arms has been preserved.

The latest step in the apparently never-ending campaign against guns in the hands of law-abiding citizens is H.R. 8828, introduced in Congress this June by EMANUEL CELLER of New York, chairman of the House Judiciary Committee which will hear and decide upon the bill.

H.R. 8828 would: first, require the registration of all firearms; second, require the purchasers of firearms and ammunition to be licensed; third, outlaw the possession of handguns by private individuals, with only a few exceptions; fourth, reinstate the recordkeeping requirements on rifle and shotgun ammunition sales which were first imposed in 1968 and then removed by Congress last year; fifth, require the States to enact gun-owner licensing laws on their own or lose the revenue they receive from the Federal excise tax on sales of firearms and ammunition, which is now applied to fish and game programs.

As the California Rifle and Pistol Association well said in its July newsletter, this bill, if enacted into law, would "accomplish about all that the gun abolitionists have hoped for except the outlawing of rifles and shotguns which will come later."

H.R. 8828 or any similar bill must be unwaveringly resisted. The very last thing we need, in a country so deeply threatened from both within and without as the United States is today, is to disarm its law-abiding citizens, leaving them helpless before any degenerate or destroyer who can get past our first lines of defense.

CALIFORNIA SAVES ITS TREES

HON. ROBERT L. LEGGETT

OF CALIFORNIA

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. LEGGETT. Mr. Speaker, the State water project in California has been one of the great on-going public works projects in our Nation's history. It has transformed tens of thousands of acres of arid land into fertile area, and has diminished the flood threat along many natural waterways.

Unfortunately, in the past, the economics of a particular project have often outweighed the scenic or environmental concerns. This was especially true along the levees which were often denuded of vegetation during repair and construction.

This has now changed, and the Army Corps of Engineers is now making every effort to spare the trees lining the levees. In one case, 14 trees have been left standing along a stretch of levee near Sacramento, Calif., during an embankment repair. I say 14 trees is worth saving.

I enclose the following article from the September 3, 1971, edition of the Sacramento Bee which testifies to the Army Corps concern for its environment and its new policy for the seventies.

"SPARE THAT TREE" IS NEW ARMY ENGINEERS POLICY IN DELTA LEVEE WORK

(By Dorothy Augusta)

WALNUT GROVE.—If the poet who wrote "Woodsman, Spare that Tree!" were alive today and traveling down a Sacramento River delta levee highway, he could take heart.

No longer are trees being indiscriminately torn out by their roots by the claws of bulldozers when levee repair work and rocking must be done by the Army Corps of Engineers. The corps says only those trees are being removed which are very old and which might topple in a storm, taking a huge chunk of levee with them.

Every effort is being made to preserve as many trees as possible, an abrupt about-face from former repair methods.

Fourteen valley live oaks have been left standing on a stretch of Highway 160 levee now under repair between Walnut Grove and the Paintersville Bridge. While rock revetment work is being carried on all around them, they stand as a verdant testimonial to the "new look" in levee repair.

"It is the policy of the US Army Corps of Engineers to save every tree possible," said Joe Roberts, general inspector for the engineers.

"We are also conducting experimental replanting in two areas where levee repair has been completed. One is upstream on the left bank from Elk Horn Bridge, and the other is about five miles downstream from the same bridge."

The work is being conducted out of the Valley Resident Office in West Sacramento.

"This new method is more costly," said James Ferry of Sacramento, the contractor doing the levee repair. "All brush is removed by hand, and the trees left standing have been shaped and pruned by tree surgeons. Formerly all stripping was done with machinery."

One farmer whose land fronts the levee bank under repair estimates it cost $85,000 to leave the 14 trees standing.

Some 15 years ago, when levee stripping first started, it evoked a public outcry. Thousands of signatures appeared on petitions, both from landowners and boaters. Public hearings were held, asking engineers to reappraise their methods of conducting bank repair operations. The engineers countered that they did not build the smooth-sided levees, but were only called in to repair them, and complete tree removal and rocking was the most economical method to accomplish this. It costs $10 a lineal foot to put rock on a levee face.

The delta has become so popular, and its use so widespread as a vacation spot for the boating public that the new policy being adopted by the engineers should do much to keep everyone happy.

ON NATIONAL DEFENSE AND THE MARINES

HON. F. EDWARD HÉBERT

OF LOUISIANA

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. HÉBERT. Mr. Speaker, Gen. Ray G. Davis, Assistant Commandant, U.S. Marine Corps, recently gave an address to the Marine Corps personnel at the Eighth District in New Orleans.

I was privileged to be in attendance and thoroughly enjoyed what General Davis had to say. His words are most pertinent in view of the antimilitary feeling which is so prevalent in the country today, and I want to make them available to every Member of Congress.

I insert it at this point in the RECORD:

ADDRESS BY GEN. RAY G. DAVIS

Mr. Hébert, Distinguished Guests, Ladies and Gentlemen:

Mrs. Davis and I are delighted and highly honored by your presence here this evening. This is our first visit to this charming city, and in just a half day we have noted how much we have denied ourselves by not coming before—we know we must come again.

Being in the presence of your great Chairman Hébert provides somewhat of a key note for any concerns tonight.

Members of a recent Presidential Blue Ribbon Panel sounded a general alarm in their report . . . "In a dramatic shift of power, largely unnoticed by the public, a quarter century of clear United States strategic superiority has ended. If these observable trends continue, the United States will become a second-rate power, incapable of insuring the future security of the freedom of its people."

The distinguished Chairman of the House Armed Services Committee, who is with us here tonight, brought into clearer focus some of the specifics. "Unless we do something about it in the next year or two, Russia is going to have the best Navy in the World. It is an amazing thing when you look at it and see what has happened to us. Here was a nation that was land-locked. Today they have more submarines than the Germans had at the outbreak of World War II. They have diluted our effectiveness in the Mediterranean . . ."

Let us consider the military threat which is indicated by these changes. Look at the missile picture. In 1965, we had 954 ICBM's, when the Russians had only about 220. We have made few additions to our supply, while the Russians have increased theirs to almost 1500, of which about 300 are the SS9 type with a warhead explosive power equal to 25 megatons—several times the power of our large missiles.

The Russians have modernized and expanded their fleet to an all-ocean Navy. Only one percent of the Russian Navy is over twenty years old, while 41% of our fleet is in the over-twenty category. They now have the largest submarine fleet in the world. In nuclear powered submarines, the superiority in numbers now held by the U. S. will be bridged by 1975. The U. S. Merchant Fleet has declined by more than one-half since 1949 . . . The Russian Merchant Fleet has been tripled.

Since World War II the communists have seized seventeen Free World countries. We had had further direct confrontations in Greece, Berlin, Iran, Lebanon, Cuba, and now in Vietnam. All of this while they were relatively weak, and we enjoyed great strengths. It would be irrational to believe with their growing strength they will now prove to be less hostile.

These gains have gone largely unnoticed. The gradual change did not alarm us. But, over a period of twenty years, these changes drastically altered the total balance of world power.

How has it happened?

In the simplest terms, during this 20 year period, the Soviet Union has been spending on defense three times more of its gross national product than we have. Aggravating this during the last five years, the Vietnam War has cost us approximately 22 dollars for each dollar that it cost the Russians. After the new military pay raise, the United States will expend about 60% of its defense dollar to pay personnel. The Soviets on the other hand, use only 25% to pay their people. That means that our Defense Department has only about ½ as much of each dollar to spend on equipment and material, plus research and development, as the Soviets have.

As the Soviet Union moves to a position to superiority I don't expect them to attack us militarily. My concern is that the Soviet Union will use the great power they have developed for political and economic purposes. Their Merchant Fleet presently numbers about 1700 ships, with a goal of a ten-fold increase by 1980. In the markets of the world, they can underbid us. They can carry more cargo, at a better rate, than we can. This alone could present a challenge to our national economy because of our dependence on world trade.

We have successfully fended off the communist threat thus far, but we are weakening. Our resolve is being questioned. President Nixon expressed his concern recently in Kansas City when he said:

"Great civilizations of the past, as they have become wealthy, as they have lost their will to live, to improve, then have become subject to the decadence that eventually destroys the civilization. The United States is now reaching that period." The President continued: "I am convinced, however, that we have the vitality . . . the courage . . . the strength . . . across this nation that will see to it that America not only is rich and strong, but that it is healthy in terms of moral and spiritual strength. . . ."

As our nation faces the challenge of the future much of what will happen to us rests in the hands of our youth.

With this conclusion, it becomes abundantly clear that young Americans must be of prime concern to all of us. We, as adults, must appreciate their problems and encourage them to triumph over today's challenges. Only we can provide the leadership and example required as our youth face a future much different than today's world. A discernable shift in world power is under way which will make free peoples less and less secure. During the troubled times ahead our young people are the potential strength on which this nation must draw. They must be inspired to raise their sights. Unfortunately, the road is strewn with those who have dropped out. Studies show that more than one third of our young people have little desire to face the challenge. These want neither physical nor mental contest. They disdain leadership, discipline and participation. There is no way for them to be launch into a successful future. They pose no real competition for the others who have set their sights high. However, we must erect bright sign posts which say "don't join them, and don't be misled by their false claim of a miraculous new life based on the belief in 'Nothing'."

Nothingness, as a belief, highlights a need for leadership from within the present generation. There is a growing minority of American youth setting a pattern of conduct and self destruction far worse than is found in any other civilized country on earth. Statistics show we suffer the highest ratio of drug abuse, the greatest incidence of venereal disease, and the highest frequency of crimes among those under 25 years of age—the worst in the world.

Contrary to those who drop out, most young Americans are of great spirit—the kind of spirit upon which the freedom of the world will depend. This great spirit can manifest itself in countless ways. One of these is inherent in the words of John Stuart Mill which I saw inscribed over a mantelpiece in Vietnam:

"War is an ugly thing, but not the ugliest of things; the decayed and degraded state of moral and patriotic feeling which thinks that nothing is worth war is worse. A man who has nothing for which he is willing to fight;

nothing that he cares about more than his own personal safety; is a miserable creature who has no chance of being free, unless made and kept by the exertions of better men than himself."

I am not entirely dismayed, because I see in the faces of young Americans the will to succeed—the will to become the leaders.

I compare them with the young men with whom I have served in the desperate days of Guadalcanal in World War II, when the Japanese controlled the sea and the air. Men on short rations, sick with malaria and dysentery. The men who trod in deep snow over the mountains of North Korea, the Chinese enemy on all sides—the thermometer reading 24 degrees below zero! And, more recently, the men who spent countless hours each day on the trails, in camps and villages in Quang Tri, the Northernmost of South Vietnam's Provinces, along the Demilitarized Zone.

A typical infantry man in Vietnam operated in the mountains and in enemy hide-a-ways. Our fighting men stayed out for as long as sixty days at a time. They cut or blasted a hole in the forest to get supplies and replacements by helicopters. After long periods on the trail, units were rotated to rear bases, but in a few days these men were ready, and often anxious, to go out again. This aggressive, can-do attitude was indicative of their strong desire to get on with the job. Also typical, in a different role, was Corporal Jackson and his Combined Action Platoon. Corporal Jackson had ten Marines, one Navy Corpsman, and thirty-five Popular Force troops in his unit to provide protection for three hamlets. He conducted troop training and supported the village rebuilding program. The village leaders sought his assistance and advice, entrusted their stores of rice and other goods to his care, and reported to him when the Viet Cong mined a bridge or a road. What more rewarding experience could a 20-year old American such as Corporal Jackson have, than to assume such responsibility and to see and feel the faith and rising hopes of these people? Not one of the scores of villages where we established teams like that of Corporal Jackson's fell back into Communist hands. Isn't it ironic that we so seldom hear about men like Corporal Jackson? They are the men who know how it is to crawl through the deep jungle after the enemy—the shock, the grief, and the growing old over-night—the loss of friends in no-name villages—the anguished wail of orphaned children and bewildered old people. They also know the value of trusted comrades and the fuller meaning of manhood which comes to those who serve.

How reassuring to know that these young Americans, who will assume much of the leadership in the coming generation, have had their characters forged in a crucible of gallant service to others; young Americans, many of whom had never before broken out of their shells of self-interest; who never before realized the rich reward which comes from unselfish service and sacrifice; who have been able to broaden their experience and deepen their understanding in ways and to degrees not attainable in any other endeavor. They gained many virtues as an enduring cement; self-reliance, self-discipline, individual responsibility, contempt for cowardice and softness, surrender of private interest, obedience to law, integrity and loyalty; firm rocks upon which successful states and great societies are built.

From the news, you are aware of the existence of problems, which we all face. These have to do with drugs, cross-cultural communications and, currently, the public concern over war crimes. These problems must be kept in perspective. Just in our small Corps, more than 700,000 Marines served honorably in Vietnam while, as one example, less than 50 Marines have been charged with war crimes. A few others—now out of the Corps—have identified themselves (according to the Congressional Record) as being associated with war crime situations.

Far over-shadowing these few, were those hundreds of thousands of Marines who wanted to serve in Vietnam. During the war, 42,000 Marines voluntarily extended their tours in the combat zone—particularly those involved in constructive programs with the people.

This underscores surveys which show that our men knew what their mission was. They believed in their task and got it done! No one could have a more fervent desire for peace, but they demand a just peace. And they know of their great contributions in Vietnam.

Since 1965, the number of children in school was multiplied 15 fold—200,000 up to 3 million. From one university of 2,000 students, to five universities with over 40,000. In five years, 12,000 classrooms were built; 14 million textbooks were printed. A great feeling of personal security and well-being has spread throughout the population of RVN. To our troops, lack of concern for the people of Asia is immoral, for the notion that the men and women of Asia "are not worth the effort"—as voiced by some about us today—is immoral. These young men see our resistance to the massive invasion from the North as a noble effort by any Christian standards.

The greatest tragedy for them would be for us here at home, reacting to doubt and confusion being spread by the vocal activists, to give away their great accomplishments. Other Americans here at home need somehow to catch up with these young men—with their exceptionally high morale, their enthusiasm and rock-solid belief in what they have done.

A great debt is owed these fine Americans. Our great institutions, religious beliefs, culture—the creative arts, the sciences, the humanities, the noblest achievements of our works and our minds—all these exist and grow only as long as free men like these make such sacrifices. As these young men return, their attention to things here at home must carry great weight. They join a generation of Americans who have accomplished much; a generation which has built more schools and colleges, more hospitals and libraries than all previous generations combined.

Also, that generation has trained more physicians, surgeons, dentists, lawyers, teachers, scientists, and engineers, than did all our ancestors in a thousand years. Diseases such as smallpox, polio, tuberculosis, and pneumonia have been brought under control.

Personal gifts to private charities exceed 14 billion dollars per year. Minority groups have been provided greater dignity, more equality and opportunity than in any other generation in any nation. In one lifetime, we have eliminated the animal-like totalitarianism of Adolf Hitler in Germany and Mussolini in Italy; Tojo in Japan—plus suppression of the terrible scourge of communism which threatened *South* Korea and now *South* Vietnam. In this, we have not coveted a single acre of land or sought to take one dollar—making liars of those about us who proclaim America is an aggressor and imperialist, or cry that our efforts are immoral or unChristian. Much remains to be done! The great challenge for all of us is to undergo the vital infusion of spirit demonstrated by these veterans. Essential though it is to continue technical development and social and scientific explorations, a prerequisite to our success will always be the availability of dedicated, smart, highly skilled individuals—large numbers of men and women of great spirit! Whatever else we do, the proper nurturing of young Americans will ensure that the bright torch of our great heritage as champions of freedom with justice continues to light the way in this troubled world. We must encourage every young American to possess that essential spirit.

I want to assure you that the Marine Corps is prepared, as it always has been, to meet such a challenge. We will maintain our professional quality. The individual Marine is the key to our success.

For nearly two centuries we have kept our standards high and our ranks small. We have men who are proud of their country, and who wish to serve it in an elite Corps. We have men who are not conformists, but who are disciplined; men who believe in principles, who have made the decision themselves; men who are not following fads.

We have good men who know that war is not a game, who feel that, while nobody likes war, somebody has to know how to wage a war and win.

We are continuing to train Marines the way we have always trained them. No compromises, no shortcuts, no promises except one—they will be Marines, with all that title conveys. They will stand with other men of like qualities—other Marines.

They are ready to go anywhere, anytime—not with emotion, but with purpose. And that purpose is the defense of their country.

Adversity builds character in the strong, but it can destroy the weak. Our great need is to kindle this burning spirit in those who possess the adequate physical and mental ability, but who lack the heart. To those of strong heart who suffer from physical or mental defects, we must offer even more support.

Your great challenge is to aid the young in choosing their intellectual endeavors wisely, and combine this choice with self-discipline and unselfish service which offer the best opportunities to participate in the effort to maintain a strong America. This requires more than dreamers who occupy themselves with distant concerns. It requires active participants who tackle the problems and ills immediately at hand. There is a strong temptation for the young to become impatient and frustrated with the slow pace of events and to lose heart, while some resort to violence. This impatience which can tear down the community must be redirected. We must energize this sense of frustration, not toward destruction, but toward the building of a strong community—one which will be capable of fulfilling the needs of all.

We must pledge them our full support. We must heed their complaints and appreciate their frustration, but guide them to greater effort. Together with them we must fend off those who threaten us, and go forward hand in hand toward a better America. With the many changes in the world of the 1970's, one fact remains true: American strength is the keystone in the structure of world peace.

Thank you.

"BERLIN ACCORD" GRAVEST EXAMPLE OF RETROGRESSIVE ACTION THAT IS BEING DESCRIBED AS PROGRESS

HON. JOHN E. HUNT

OF NEW JERSEY

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. HUNT. Mr. Speaker, I detect in Government policies of late a very discouraging tendency to engage in retrogression while labeling it progress.

The House has passed and the Senate is considering a welfare reform bill which nearly doubles the number of welfare recipients and more than doubles the cost of welfare. In the process it employees updated versions of many of the old gimmicks for reducing the welfare

rolls which have already been proven ineffective or even counterproductive. This is retrogression and deterioration, labeled as progress and reform.

Or take the President's proposed China visit and the accompanying cacophony calling for admission of Red China to the U.N. at the expense of our Nationalist Chinese allies. We have, ever since the U.N. was established, taken the position that this inherently less than effective organization would be rendered utterly useless, if not potentially destructive of world order, if self-proclaimed belligerents like Red China were admitted to membership. Nothing has happened to indicate that Red China has become a peace-loving nation or moderated its avowed intent to achieve world domination. Yet the President has agreed to a state visit which, whether intended or not, adds tremendous new pressures to the cause of Red Chinese admission to the U.N.—a cause which has been steadily gaining strength over the years without American help. This is a retrogressive step toward international quarreling and chaos, labeled as a new initiative toward world peace and progress.

I could cite other examples, but the purpose of my remarks today is to discuss the Four Power Agreement on Berlin—the so-called Berlin Accord—signed on September 3. It occurs to me that this is the latest and certainly the gravest example of a retrogressive action that is being described as progress.

Billed as a "solution" to the the Berlin problem, it is, in fact, not a real solution at all, but rather a long step backward to the 1945 three-power occupation status for West Berlin, complete with the "separate sectors" concept. In the process this "solution"—rhetorical assurances to the contrary notwithstanding—abrogates arrangements for the German administration of West Berlin instituted in 1949 and officially recognized in 1954.

Under the new "accords," Berlin is to be divided into three Western sectors while the former Soviet sector becomes officially part of East Germany.

The division of West Berlin into three Western sectors abrogates the complex process of consolidation into a single entity under German administration, with the three powers as protectors and overseers, which was taking place in recent years.

Progress then, it seems clear, would have involved negotiating an agreement which, at very least, would have enhanced this process and provided for an increased security and political integrity of a German-administered West Berlin, permitting the United States, Britain, and France to further reduce their involvement there with the ultimate goal to withdraw entirely without jeopardizing the security of the area.

We have been in Berlin since 1945. We have now negotiated for 17 months to find a solution which would, as the "accord" itself expresses it, "promote the elimination of tension and the prevention of complications" there. And what did we achieve?

Is the United States out of Berlin or less deeply involved there? No. Is there any new administrative authority for the German people of Berlin over their own lives and destinies? No.

All that has been achieved in the name of reduced tensions and the prevention of complications is this: a reemphasis on "sectorizing" West Berlin but recognition of East Berlin as an integral part of East Germany; elimination of even that degree of German self-administration and West German authority over West Berlin which, be it de facto or de jure, has existed; the creation of a new source of tensions; and the addition of new complicating factors giving East Germany and the Soviet Union renewed power to infringe upon and to interfere with the freedom of West Berlin.

The Soviets get considerable advantage from the new agreement. Not only is their complete domination of East Berlin and East Germany officially recognized, thus providing the first official acceptance of the Brezhnev doctrine, but they are accorded the right to establish a consulate-general in West Berlin, while all laws and constitutional provisions of the Federal Republic of Germany—West Germany—and of West Berlin which treat West Berlin as a constituent part of the Federal German Republic are suspended and the political presence of West Germany in West Berlin is being gradually eliminated.

Let me itemize the practical effects of this last and grandest item of surrender.

First. West Berlin cannot participate in the election of the President of West Germany any more, as was the case in previous elections.

Second. The President of West Germany cannot exercise any constitutional power over West Berlin. His acts in this respect can be vetoed by the Soviet General Consul residing in Berlin.

Third. There are 23,000 Federal employees in West Berlin. In spite of the formal arrangements permitting them to remain there, the elimination of constitutional authority accomplished by the "accord" will force the reduction of this Federal employment in the city.

Fourth. The Bundestag cannot have its sessions in West Berlin as was the case between 1955 and 1971. The last full session of the Bundestag took place in 1965.

Perhaps as significant as the restrictions imposed on German administration of West Berlin and its relations with West Germany is the fact that the wording of the "accord" constitutes de facto recognition by the United States of the East German Republic and establishes its "sovereignty."

The matter of the Consulate-General to be established by the U.S.S.R. in West Berlin also betrays the extent to which the Soviets achieved hard concessions in return for vaguely worded promises, and illuminates their motives in pursuing with such diligence the finalizing of the "accord."

The General Consul will be responsible, not to the Soviet Ambassador in West Germany or in East Germany, but directly to Moscow, thus, underscoring the independent position of West Berlin, as a "Third Germany." West Berlin is not only to be once more "sectorized" under the three-power administration, but, for all practical purposes, is to have imposed upon it a three-and-a-half power administration, the Soviet General Consulate constituting the additional one-half administrative power. The result is clearly to create rather than prevent new complications in West Berlin.

More significantly, it is indicative of Soviet motives in negotiating the "accord." The Soviets have a history of actions designed to neutralize, humiliate, and "Finlandize" West Germany. And they regard West Berlin as the first target, the soft underbelly, the vulnerable strike point on the way to domination of West Germany. The establishment of a General Consulate there is only the opening wedge, the first salvo, in what can be expected to be ever-mounting crescendos of overt and subversive attacks on West Germany through West Berlin.

What then, ostensibly, did we gain from the agreement. On the surface it appears that we made the foregoing concessions in order to obtain improved and increased access by West Germany to West Berlin and by West Berliners to East Berlin and East Germany.

The promise is there, but any serious study of the wording of the agreement confirms the suspicion that the promise is a highly illusory one.

For example, under the wording of the new agreement, those seeking access to West Berlin from West Germany become "transit traffic" rather than "access traffic." It may seem a minor point but it is highly significant. What it means is that, for the first time since 1945, we have officially recognized the supreme authority of East Germany over this traffic and the sovereignty of the territory over which such traffic must pass.

The recognition of East Germany's authority over this traffic as supreme and official makes the "accord's" vague assurances of "unhindered" traffic and "most favorable treatment" subject to possible future unilateral interpretation by the "supreme authority" of East Germany. For East Germany may pass any new regulations it sees fit regarding the transit traffic across its own territory.

Who is to blame for this sellout? The answer to that is not entirely clear. It is quite clear that the agreement was reached at the insistence of the Brandt government in West Germany, as the first step along the road to the fulfillment of Brandt's vision of Ostpolitik. Egon Bahr, West Germany's representative at the Four Power Talks, has been in the United States three times this year to insist that the United States accept the position that West Berlin is not a West German "land" which is the view of his government.

Yet, disrupted voting patterns in recent elections in Schleswig-Holstein, Bavaria, and Berlin, itself, indicate rather conclusively that the German electorate is opposed to the Brandt policies of Ostpolitik.

The first voter reaction to the approved Berlin agreement will come in elections in October in Hamburg. It will, of course, be too late to reverse or repeal the agreement itself. But it should be

earnestly hoped that the voters of Hamburg will take the opportunity to register their strong opposition to these policies and signal a warning to both German and American leaders as the Prague negotiations begin and Chancellor Brandt negotiates in the Soviet Union.

Perhaps the true measure of the Berlin Accord can best be perceived in a little-publicized incident the day following the signing of the agreement. On that day a young East German tried to cross the Berlin Wall. Perhaps he had taken seriously the assurances of his freely elected Chancellor and the new agreement that tensions were to be relieved, freer travel and communication permitted between East and West Berlin and complications eliminated. If he did, he found out in a very dramatic and painful way just how mistaken he was. East German border guards promptly shot both his legs from under him and carted him away to an uncertain fate which would hardly be less than prison or more than execution. Is that the "solution" to the Berlin problem?

MAMMOTH ECOLOGY PROJECT

HON. CHARLES A. VANIK

OF OHIO

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. VANIK. Mr. Speaker, last Saturday, over 1,000 young people, from Girl Scout, Brownie, Cadette, and Boy Scout troops in my congressional district launched the mammoth ecology project to clean up the once beautiful Sunset Pond in North Chagrin Reseservation, a valued park in our district.

This project was under the direction and guidance of a very imaginative and talented young women, Michele Stevens. Notwithstanding a recent leg operation which impaired Miss Stevens, she directed all of the "action" of these 1,000 volunteers and dozens of interested parents in an effort to save this dying lake. The project was a great success.

It was my pleasure to spend a little time with these inspired young people helping to dispose of uprooted lilypads which were choking off life in the pond. Many of the Scouts were literally up to their heads in the water, having to stoop in the water to pull up the plants by their roots to assure that they would not grow back. It was an extraordinary sight to see this swarm of mud-laden young people going about such a difficult task with all of the energy and enthusiasm they could muster.

The Scout movement, its leaders, all of the young people and our community will now have a small but significant monument to the commitment of these volunteers. That monument will be a living and thriving Sunset Lake filled with wildlife, fish, and birds. What better monument can any person have than to have saved a natural resource for the whole community to enjoy for generations to come. We extend our congratulations for an enormous task well done. It is my hope that many more projects like this one at Sunset Lake will soon follow. If the people of any community do not assume these great burdens for their own betterment who will?

Mr. Speaker, at this point I wish to insert in the RECORD copies of the various instruction sheets for the mammoth ecology project, and a clipping from the News-Herald, by Irene Neden, and the Cleveland Press, by Joe Collier, who was instrumental in encouraging this project:

MEP: MAMMOTH ECOLOGY PROJECT, SUNSET POND, NORTH CHAGRIN RESERVATION

1. Objectives:
a. Clean up pond and surrounding area.
b. Education of scouts and public.
c. Publicity.
2. Date and Time:
a. September 11, 1971 (Saturday).
b. 9 a.m.–5 p.m.
c. Pond will already be partially drained when we arrive.
3. What will be going on:
a. Seniors—Digging out excess lilies in the pond. Leading a sing-a-long. Working as nurses assistants.
b. Cadettes—In charge of conservation display. Run sign in and out stations. Load lilies from edge of pond to waiting trucks. Stationed around area to answer questions. If OKd—paint picnic tables or latrine.
c. Juniors—Pick up litter around pond. Pass out litter bags with information included. Serve food including sandwich making. Keep good supply of water for Muckey seniors.
d. Brownies—Pick up litter around park. I am a tree (nature assignment).

The girls will be working on two hour shifts, there will be four shifts.

There will be a nurses station across from the pond.

Forest Lane shelter house will be divided into three parts—
a. refreshments.
b. entertainment.
c. Conservation display.

Outside the shelter will be sign in and out stations—Everyone will be required to sign in upon entering.

MEP CHAIRMAN

Brownies: Mrs. T. E. Lusk (Nel), Lyndhurst.

Cadetees: Mrs. C. J. Surace (E. J.), Mayfield Heights.

Display: Mrs. Walter Pawlak (Eva), Highland Heights.

Food: Mrs. Gordon Oltmanne (Joan), Mayfield Heights.

Mrs. Arnold Stone (Diane), Mayfield Heights.

Mrs. Marvin Hallberg (Jimmy), Lyndhurst.

Juniors: Mrs. Robert Grunwald (Doris), Lyndhurst.

Mrs. F. Michalk (Cathey) Lyndhurst.

Pond: Mrs. B. F. Sauer, Jr. (Mac), Gates Mills.

Traffic: Mrs. J. R. Hauser (Sonny), Lyndhurst.

Nurse: Mrs. Thomas Gorgas (Doris), South Euclid.

Mrs. Robert Jewell (Sue), Mayfield Heights.

Publicity: Mrs. Elbert Thurman (Marion), Mayfield Heights.

Director: Miss Michele Stevens (Mickey), University Heights.

PARTICIPATING TROOPS

List of Troops participating from Mayfield Heights, Mayfield Village, Highland Heights, Richmond Heights, Lyndhurst, Euclid, Cleveland Heights, Chagrin Falls, South Euclid, and Gates Mills:

BROWNIE TROOP, 7 AND 8 YEARS OLD

49, 106, 421, 822, 1491, 1845, and 1847.

JUNIOR TROOP, 9 TO 11 YEARS OLD

137, 1278, 605, 1932, 185, 1183, 513, 479, 736, 1001, 1058, 1856, 1534, 1633, 1842, 727, 1373, 161, 1432, 108, 1474, 1541, 228, and 93.

CADETTE TROOP, 12 TO 14 YEARS OLD

107, 156, 385, 1318, 1173, 1067, 1058, 1101, 1611, and 1052.

SENIOR TROOP, 15 TO 17 YEARS OLD

427, 474, 1038, 1420, 1166, 1915, 1408, 1704, 941, 1107, 1318, 987, and 1325.

[From the News-Herald, Sept. 2, 1971]

SCOUTS REHABILITATE POND

(By Irene Meden)

When some of the Senior Girl Scouts, in the Greenwood Community Association Division, heard about the plight of Sunset Pond they wanted to do something about it.

So do something, they did. They organized, what they call "A Mammoth Ecology Project."

For those of you who are not familiar with the background information of Sunset Pond, here's the low down.

The pond is located in the North Chagrin Metropolitan Park and is also known as 'Duck Pond.' Water lilies and other debris are choking the pond and making it almost uninhabitable for the ducks.

The Pond was cleaned out seven years ago by bulldozers but the Park Officials claim it can't use bulldozers again. So the Senior Girl Scouts will actually be in the pond pulling the water lilies and debris out.

Some farmers already have made arrangements to pickup the water lilies to use as mulch.

Cadette Girl Scouts will be loading trucks for the farmers.

Other Cadettes and Juniors will be scrubbing and painting picnic tables and outdoor rest rooms in the park area.

The little Girl Scout Brownies of the organization will be wearing nature fact signs and have their noses painted red, and when anyone presses their red nose, the Brownie will relate facts about the sign she is wearing. Examples given are, "I am poison ivy," or names of different trees. The Brownies will also be picking up litter in the park area.

The Forest Lane Shalter House in the park will be divided into three areas, food, entertainment and an Ecology Display area.

In the food area, the girls who finish their shifts at muckraking and litter picking will be able to eat and enjoy some of the guitar playing and singing in the entertainment area. The ecology display area will have a contest for the best exhibit shown on ecology.

The project, which will involve over 800 Girls Scouts in areas of Highland Heights, Mayfield Village, Mayfield Heights, Gates Mills, Euclid, South Euclid and Lyndhurst, will take place on Sept. 11. Hours are set from 9 a.m. to 5 p.m.

Thus far, the group has been offered 1,500 hot dogs, 15 tanks of Pepsi and the Willoughby Hills Fire Department has offered to furnish water tank trucks for the girls to use for cleaning up.

The Project Leader for the 'Mammoth Ecology Day' is a sophomore of John Carroll University, Michelle Stevens of University Heights.

Also included in the project are Mrs. Nel Lusk, Mrs. Elaine Surace, Mrs. Eva Pawlak, Mrs. Jean Oltmanne, Mrs. Diane Stone, Mrs. Jonny Hallberg, Mrs. Doris Grunwald, Mrs. Cathey Milchalk, Mrs. Marilyn Sauer, Mrs. Sonney Hauser, Mrs. Doris Gorgas, Mrs. Sue Jewell and Mrs. Marion Thurman.

[From the Cleveland (Ohio) Press, Aug. 31, 1971]

LILIES THREATEN POPULAR PARK—GIRL SCOUTS TO CLEAN OUT POND

(By Joe Collier)

About 900 Girl Scouts and their leaders will labor Sept. 11 to rid Sunset Pond of most

of its water lilies and all of the man-made junk that clutters it.

The event—called the Mammoth Ecology Project of the Lake Erie Girl Scout Council—is the idea of Miss Michele Stevens, who is the project director.

Ordinarily water lilies are pleasant natural decorations, but at Sunset Pond they have become too much of a good thing. They are crowding the entire five-acre surface, threatening to reduce the pond to a marsh.

Sunset Pond for many years has attracted, for rest and recreation, a variety of water fowl—Canada geese, mallards, black ducks, teal, wood ducks, great blue herons, green herons, bittern, kingfishers and their associates.

Two Canada geese families, and about five wood duck families were reared there this summer, contributing about 50 young birds to the environment.

The water fowl have in turn attracted all kinds of people, who visit the place every day of the year, offering more bread and other food gifts than the birds can consume.

The excess food has supported a large and growing population of goldfish, bullheads, bluegills, catfish and a community of lesser creatures. And from the shore foxes watch and eat now and then.

All of this has made Sunset Pond the centerpiece of the North Chagrin Reservation and the second best attended feature in the parks system.

The pond creatures would be dispossessed if the lilies are allowed to convert the pond to a marsh.

Last summer Harold Wallin, the parks' chief naturalist, spoke discouraging words about the future of the pond. The Press reported them and Miss Stevens resolved to mobilize the Girl Scouts to the rescue.

After a winter of organization and planning, with the help of Mrs. Marilyn Sauer, Mrs. Elaine Surace, Mrs. Sonny Hauser, Mrs. Marion Thurman, Mrs. Jean Oltmans, and many others in Mayfield Heights, Mayfield Village, Lyndhurst, and other communities, the day approaches.

The water level will be lowered, and about 90 senior scouts, called muckrakers for the day, will wade in and dislodge tons of excess water lilies. Park trucks will haul them away.

Other scouts will collect litter from the surrounding park and some will feed the other workers.

Wallin has expressed the deep gratitude of himself, the park system and visitors to Miss Stevens, her aides and all the Girl Scouts.

THE NEED FOR A COMPREHENSIVE NATIONAL HEALTH CARE PLAN

HON. MARTHA W. GRIFFITHS

OF MICHIGAN

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mrs. GRIFFITHS. Mr. Speaker, the need for a comprehensive national health care plan is becoming increasingly apparent. Today, I am providing for the RECORD two articles from the New York Times of September 13, on the present dilemma of health care in the United States. Should there remain any doubt in the minds of my colleagues that this is the year that H.R. 22, the Health Security Act, must be enacted, they should read these articles.

The spiraling costs of health care in this country must be halted. President Nixon's health insurance proposals will not do this. Unless we move immediately to construct a comprehensive national health care plan, many more Americans will be priced-out of the health care services they need and deserve.

The articles follow:

DILEMMA IN HEALTH CARE: RISING COST AND DEMAND

(By Richard D. Lyons)

WASHINGTON, Sept. 12—A decade ago, one medical group in Manhattan charged $35 for a basic physical checkup; today it charges $65. In those same years the going rate for an appendectomy in New York rose from $485 to $1,175 and the cost of an average hospital stay, for the nation as a whole, rose from $265 to $785.

Indeed, Americans are spending money on health care as if there were no tomorrow.

And while almost everyone is complaining about spiraling health care costs, most of the same people—rich and middle class as well as poor, insurers and providers as well as consumers—are also demanding more and better health care no matter what it costs.

The statistics for medical costs, at a time when accumulated inflation has swollen most economic indications, are staggering. This year Americans—through their own pocketbooks, their Federal, state and local governments, and their health insurance companies—will spend almost $80-billion for such things as 15 million operations, two billion prescriptions and the salaries of the five million people who provide health care.

One conservative Federal estimate sets the nation's total health bill by 1980 at $156-billion, which would be 8 percent of the gross national product and over five times the peak annual cost of the Vietnam war.

"I think medical care is going to be the Vietnam of the nineteen-seventies—billions and billions of dollars going into a quagmire," says Dr. Frederic Bass, a health planner at the University of Pennsylvania.

In this era of inflation, no other item on the Consumer Price Index has risen so fast over the last decade as health costs. In the last four years alone, they have climbed 30 percent.

Hospital rates have risen five-fold. Today they are hovering at about $100 a day, an unthinkable sum a decade ago. But a decade from now, according to some projections, hospitals may be charging $1,000 a day. At one Boston hospital, a bed in the intensive care unit for respiratory diseases now costs $425.75 a day.

Such statistics provide only a partial picture, however. Behind them there is a long period of dramatic progress in medical technology and, along with it, an unquantifiable but almost tangible rise in public expectations. And at the conjunction of all these factors are two fundamental questions:

If, theoretically, good health care is now possible for everyone, then how can the nation rationally allow anyone to go without it? But if, practically, the cost of good health care continues to rise so steeply, then how can the nation maintain even its present standards for long without going bankrupt?

Personal "horror stories" of the financial and emotional costs of illness are seemingly endless: A New York couple is financially ruined by the medical costs of a son paralyzed by a football injury; an elderly black couple in Mississippi spend one-third of their meager Social Security check on medicine; a Californian undergoes a kidney transplant to save his life, yet does not have the funds to buy the drugs to keep it viable.

Ranging from Robert Ball, the director of the Social Security Administration, to Paul Stark, the head of a defunct Federal health center in Prestonburg, Ky., many medical administrators feel that the country is either spending too much money on health care or is not getting its money's worth.

REASONS FOR THE INCREASE

The reasons for this surge in spending include:

Inflation, which accounts for half the recent rise in health costs.

More Americans, 20 million more in the last 10 years.

Medicare and Medicaid, which accelerated the demand for services and helped to drive up their prices.

A philosophical shift to the now general opinion that health care is a right of every American, not just a privilege of birth or money.

More sophisticated medical techniques such as open-heart surgery, that lead to better medical care but at greater cost.

Unionization of hospital workers, which gives higher salaries and more costly fringe benefits to a group that has been among the lowest paid in the nation for decades.

There are other reasons, but they are much harder to document with numbers. Critics of the national health care system—many call it a nonsystem—say it has and is creating vast inequities. For example, in New York City it is at times almost impossible to find a hospital bed, that half the beds in San Francisco hospitals are empty and more hospitals are opening there.

The critics hold that there are vast inefficiencies in the prescription of drugs, the payment for health insurance and the services provided by both hospitals and doctors. For example, a favorite remark of Senator Kennedy, the Massachusetts Democrat who is the chief Congressional critic of the health care system, is that there are more neurosurgeons in his home state than there are in the British Isles, which have 10 times the population.

Another trouble is that the flood of new money into health care has not been matched by an increase in efficiency. In fact, it seems to have acted in reverse in some permutation of Parkinson's law.

"It costs more and more all the time to stand still," says John G. Veneman, Under Secretary of Health, Education and Welfare. Mr. Veneman and other Nixon Administration officials were appalled by health costs when they took office, but Federal expenses have continued to shoot up despite their efforts.

Where does all the money go? Principally to hospitals, doctors, drugs, medical appliances, nursing homes and, as overhead, to the health insurance companies such as Blue Cross and Blue Shield that spread the risk of becoming ill.

Portions of the health care pie are divided roughly this way: 40 per cent for hospital care; 20 per cent for doctors' services; 10 per cent for drugs; 6 per cent for dentists' services, and 4 per cent for nursing home expenses. The remaining 20 per cent is divided among such items as medical research, construction of facilities, and administration.

Nearly every critic of the health care system believes Americans are spending too much money on drugs. Dr. Henry E. Simmons, chief drug officer of the Food and Drug Administration, estimates that "Americans spend half a million dollars a year on drugs for which there is no valid proof of efficacy."

Just recently the F.D.A. succeeded in removing from public sale a drug named Panalba after a legal battle that ran on for years. During that time consumers were spending $30-million a year on the product, even though Federal judges as well as Federal scientists had found it to be ineffective.

HIGH DRUG PROFITS

While drug prices have not risen dramatically, the pharmaceutical industry reaps the highest profits in terms of return on investment—20 per cent—of any large segment of American industry. Congressional investigations have revealed huge profits in some specific drugs—of over 1,000 per cent in isolated cases—yet drug companies have successfully turned back most attempts to reduce prices.

Another factor is doctors' fees. "You can't reform the health care system unless you

delve into the pocketbooks of doctors," says Dr. Robert D. Eilers, director of the Leonard Davis Institute of Health Economics. He notes that one medical group recently hired a surgeon for a salary of $85,000 a year "plus bonuses."

Doctors, the most highly paid professionals in the country, earn a median income of $40,000 a year—after expenses but before taxes—according to our calculation. Only one per cent of Americans earn as much as this. Federal economists estimates that doctors' fees are almost 70 per cent higher than they were in the late nineteen-fifties, a rise almost double that of the consumer price Index.

Yet doctors have their own economic problem. Premium rates for medical malpractice insurance, for example, have been soaring. One New York surgeon said he paid an annual premium of $50 when he started practice in 1950. He expects that next year's premium will be $5,050, a hundred times as much. This expense he passes along to the consumer in the form of higher fees.

"HAVE TO PUT THE CRUNCH ON"

Despite all the complaints about drug costs and doctors' fees, most of the grumbling over the rise in health costs has been directed at hospitals. For hospitals have been getting the lion's share of health expenses.

The most common criticism has been that the hospitals have never had the incentives needed for them to effect economies. In addition, most hospitals are controlled by doctors who are unfamiliar with the modern management practices that might curb costs.

"Hospitals are the problems, but Blue Cross hasn't pushed them hard enough," says Dr. Herbert S. Denenberg, the new Pennsylvania insurance commissioner. "You have to put the crunch on someone if you're going to control medical costs."

In a rare effort to force economies, the insurance commissioner rejected a $73-million premium rate increase request from Blue Cross of Greater Philadelphia, which has been awarded an annual increase for the last quarter century. He wants to retain Blue Cross, but force it in turn to force hospitals to effect economies.

Dr. Deneberg, one of the new breed of reformers in the health care field and a friend of Ralph Nader, the consumer advocate, also accuses the other private insurance companies of "just shoveling money back and forth—they have not paid attention to cost and quality controls."

The Pennsylvanian is one of 20 new state insurance commissioners who have taken office in the last year. Many of them are determined to force economies in health costs. Others include Kenneth Deshetler, Ohio's Director of Insurance, and John F. O'Leary, chairman of the Massachusetts rate-setting commission.

Mr. O'Leary wants state and Federal agencies to intervene to force down hospital costs and some states, including New York, Maryland, California and Pennsylvania, are considering the creation of hospital rate setting commissions similar to those that regulate transportation, electric and gas rates.

Gordon Chase, head of the New York City Health Services Administration, accuses hospital leaders of using "quality of care" to "obscure inefficiency, obsolescence and traditional ways of operating which will not stand close scrutiny."

Three-quarters of all hospital bills are paid through Blue Cross, which was specifically created to perform the task. Yet Blue Cross has gone almost unregulated. Congressional investigators found recently that some local plans were paying the country club dues of Blue Cross executives' vacations in Hawaii.

The national president of Blue Cross, Walter J. McNerney of Chicago, conceded that the hospital insurance plan "has not done everything as well as it should" to hold down hospital rates. "We have not been sufficiently self-critical and innovative," he adds.

How could hospital costs be brought down? The Good Samaritan Health Service in Phoenix found a way by amalgamating a group of 10 hospitals, thus doing away with duplicating services and overhead. The group saved $90,000 last year by buying all its insurance as a package. Common laundry services and the standardization of linens and uniforms all would help, but relatively few groups of hospitals have done this.

Costs could also be constrained by clusters of hospitals if individual institutions were assigned specific tasks, such as delivering babies and performing open-heart surgery, rather than each offering a full range of services.

Keeping people out of the hospital is uniformly acknowledged as the most effective method of holding down costs.

The patient population of Philadelphia State Hospital dropped from 6,400 to under 3,000 in recent years, aided by the creation of the West Philadelphia Mental Health Consortium, a group of nine community mental health clinics.

Dr. Robert Leopold, the consortium's director, says that while costs per patient are $6 a day at the health centers, they are $15 a day in the state hospital. The Philadelphia program, one of only a few in the nation, "shows that psychiatric patients can be treated near their homes outside the hospital and at far less cost," Dr. Leopold says.

Large cost savings from Pre-Paid Group Plans also are possible through the operation of what are known as prepaid group plans, of which the most familiar are the Kaiser foundation groups of California, Oregon, Hawaii, Colorado and Ohio.

By stressing preventive medicine, that is, treating potentially serious medical conditions before they can grow into costly diseases, persons enrolled in the Kaiser groups spend less than half as many days in hospitals as other Americans. Premiums for Kaiser care are also less than comparable insurance plans, while the annual increase in premium rates has been less than elsewhere.

The money-saving potential of providing preventive services, such as periodic physical has been demonstrated by the Group Health Cooperative of Puget Sound in Seattle, which was started in 1947 and now provides health care for 140,000 people.

Last year the group health cooperative spent only $37 per member on hospitalization. This compares with $112 for the average American. Yet almost the same amount of money was spent for both groups for physicians' fees and outpatient services such as laboratory tests and X-rays. The lesson would seem to be that preventive medicine, properly run, can substantially reduce costly hospitalization.

A Federal takeover of health delivery systems, as occurred in Britain, has been advocated by some groups here. But at least two experiments with Federal funding in this country have indicated that it is little better economically than the system it is meant to replace.

In Prestonburg, Ky., one such project was canceled by the Office of Economic Opportunity after investigators found it "totally corrupt." More than half of the $4-million spent on the project went for the salaries of courthouse cronies and overhead expenses.

Another Federally funded project, the Martin Luther King Health Center in the Bronx, spends $75 per patient visit, far more than it would cost to treat a person in a doctor's office.

MAINTENANCE GROUPS

The Nixon Administration is spending $45-million on what might be one partial solution to the health cost problem—the health maintenance organization. The H.M.O., as it is known, has been praised by the President as the prime new method of organizing health care delivery for quality and economy.

H.M.O.'s, a few of which are now in operation, use groups of doctors and facilities to treat the health needs of thousands of persons living in specific areas. In his health message of last February, Mr. Nixon also proposed a $300-million loan guarantee program to start dozens of H.M.O.'s. If the Administration has its wish, 80 per cent of all Americans will be enrolled in H.M.O.'s by the end of the decade.

This percentage is viewed as wildly optimistic even by those health care experts who say that reform of the system is absolutely necessary to bring better medical care to more people at less cost.

One of the new breed of reformers who are leading the attack against wasteful and inept practices in the health care field is Dr. Denenberg of Pennsylvania, who is a frend of Ralph Nader, the consumer adocate. Dr. Denenberg is the type of freewheeling challenger of the medical establishment who, according to one critic, makes Mr. Nader "look like Louis the fourteenth."

"The health delivery system is so full of glaring inefficiencies and abuses that it is easy to give up in despair," says Dr. Denenberg. "For example, the providers of health care saddle the public with unnecessary, underutilized and duplicated services which not only produce astronomical costs, but also often deliver low quality care."

The complaints come from within the medical establishment as well. Dr. Edwin L. Crosby, president of the American Hospital Association, says the nation has too many hospital beds. And one of the truisms of medical practice holds that too many operations are being performed on too many people.

The result, according to Dr. Murray Hunter, medical director of a clinic in Fairmont, W. Va., is that "for a dollar today we're getting 50 cents worth of health care—if it were done right we'd get 80 cents worth."

Another problem is that merely increasing the money spent on health care does not necessarily lead to better quality care. A Dr. Donald Harrington, director of the San Joaquin Medical Foundation in Stockton, Calif., puts it: "An open checkbook often leads to bad work."

Yet some doctors seem to be benefitting by such an approach. Dr. Lowell E. Bellin, New York City's first deputy health resources commissioner, says: "If after two years in private practice a doctor isn't clearing $35,000 a year, you should strap an electroencephalograph to his brain to find out why."

DOCTORS' MEDIAN INCOME—$40,550—SPURS FEE DEBATE

(By Nancy Hicks)

There is probably no more emotional, controversial or complex issue in the current debate over health care reform than the earning power of the physician.

Critics of doctors' high salaries—the organized poor, health consumer groups, some economists and many doctors themselves—say it is unconscionable that one professional group of 334,000 individuals should earn a median income of $40,550 a year or more.

They cite such current practices as the use of incorporation to allow doctors tax and pension benefits, which the Internal Revenue Service has opposed but has been unable to stop, and fee fragmentation, which might mean that last year's flat-fee checkup is now broken up into individual charges that add up to more than the old fee, with no announced increase.

Doctors say their critics fail to take into account the long years of study, internship and even "apprenticeship" before a doctor can begin to earn a good living. They also cite the high cost of a medical education, and doctors' long working hours and their responsibilities.

HIGHEST PAID WORKERS

Whatever the merits of the arguments are, a look at the available figures shows that

doctors are the highest-paid workers in the country, even when salaries are adjusted for business expenses, hours of work and delayed earning power.

During the last two decades, the cost of doctors' services has risen at a rate almost double the increase of the consumer price index, Federal economists have estimated. This is in direct contrast to the trend in the post-World War II era, when doctors' fees lagged behind the cost of living.

In the last decade, doctors' fees have risen faster than any other medical cost except hospitalization, and there are no figures on which to estimate the proportion of hospital operating costs that go to interns, residents, chiefs-of-service, physician-administrators, salaried physician-researchers and to a growing number of salaried staff specialists.

In general, figures for recent years are relatively scarce. The Bureau of Labor Statistics does not keep data on doctors' incomes as it does, say, for office workers'. Most information comes from the journal, Medical Economics, from individual surveys by economists on professional societies, or from the Census Bureau or the Social Security Administration, neither of which has current figures available.

According to the continuing survey of Medical Economics, the median income of physicians under 65 in private practice in 1969 was $40,550 a year, after expenses but before taxes. A comparable survey by the American Medical Association showed an average annual income of $35,510 in 1968. By way of contrast, lawyers' average income, according to a 1970 survey by the American Bar Association, was $27,960 a year.

REASONS FOR HIGH INCOMES

There are various theories that attempt to explain why doctors' earning power is so great.

The first is the Adam Smith principle of supply and demand, which says that doctors earn more because they are in short supply. Estimates of manpower shortages in medicine range up to 50,000 trained physicians, a shortage that some critics attribute in part on past efforts of the A.M.A. to keep the supply limited.

In 1910, when the influential Flexner Report on Medical Education called for an increased emphasis on science in medical education—there were 164 doctors per 100,000 population in this country. In 1967, there were 130 per 100,000, up from 124 per 100,000 in 1963.

More than a decade ago Lee Loevinger, an Assistant Attorney General in the Kennedy Administration tried to figure out why doctors were earning more money than lawyers.

Mr. Loevinger attributed the differential to the stringent controls over accreditation that physicians had maintained. These led to the certification of fewer schools, he said, and therefore, to the graduation of fewer doctors.

An attempt has been made to reverse this trend. Twenty new medical schools have been created over the last 10 years. The number of graduates increased by 33 per cent in 1967, when compared to 1950.

POLICIES EFFECTS PERSIST

But the effects of old policies are still being felt. Although the number of physicians who graduated has increased, the general population has also increased by 30 per cent during the same period. And an analysis of last year's medical school applications showed that the schools rejected for lack of space a total of 100,000 "qualified candidates," twice the number of the estimated shortage.

Although most doctors must now undergo about 10 year's post-high school education, the American physician in the mid-1960's completed an average of 17.5 years of education. This was compared to 17.3 years for dentists, 17.4 years for lawyers and judges and 17.1 years for clergymen.

Based on 1960 census figures, which do not reflect the post-Medicaid surge in all medical costs, the net average lifetime earning for doctors was $717,000, compared to $589,000 for dentists, $621,000 for lawyers and $175,000 for clergymen.

The Census Bureau took these same figures and ranked 321 occupations according to their median annual incomes. Physicians placed first, followed by bankers, dentists, professors of medical sciences and lawyers. Clergymen were 245th on the list.

Another analysis of the same figures was made by a team of economists who tried to take the census figures and compute "real earnings," if the costs of education, including tuition and living expenses, were taken into account. By rank, and without giving figures, they concluded that on this basis dentists earned the most. Physicians were fifth and lawyers were 14th, after toolmakers and draftsmen.

The growing number of medical specialists is another acknowledged factor in the high incomes of doctors. Specialists charge an average of two to three times the fee of the general practitioner.

According to a Department of Commerce survey, 26 per cent of the nation's physicians were specialists in 1929. In 1959, 46 per cent were. An April, 1969, study by the American Academy of General Practice said that only 21 per cent of the nation's doctors were general practitioners.

The 1970 Continuing Survey of Medical Economics showed that 11 per cent of general practitioners, 13 per cent of the internists, 19 per cent of the obstetricians and 22 per cent of the general surgeons sample earned $60,000 a year or more. This compared with 5 per cent of the pediatricians, the so-called workhorses of medicine.

In the end the important question is not how much a doctor charges or earns, in the view of medical economists like Anne R. Somers of Princeton, for the affluent consumer who equates high fees with high quality will almost always pay what he is charged without complaint.

The real focus of attention according to to Mrs. Somers, should be on how doctors' present economic status may become an obstacle to attempts to make good health care more widely available, especially to the poor.

REVENUE SHARING LOSES TALENTED SUPPORTER

HON. FRED SCHWENGEL

OF IOWA

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. SCHWENGEL. Mr. Speaker, the August 15 edition of the Washington Post featured a story on Murray Weidenbaum, former Assistant Secretary of Treasury for Economic Policy. While, Mr. Weidenbaum's departure is certainly understandable as a result of his academic interests, it is indeed a set back to the forces fighting for revenue sharing. Mr. Weidenbaum's skilled efforts on behalf of revenue sharing are well known, and are further documented in the Post article.

I would like to take this opportunity to wish Mr. Weidenbaum the best of luck as he returns to Washington University. Also, I would like to take this opportunity to urge our colleagues on the Ways and Means Committee to report favorably on the President's revenue-sharing program.

[From the Washington Post, Aug. 15, 1971]

WEIDENBAUM FINISHES TREASURY TOUR

One of the most able and conscientious economists in the Nixon administration, Murray L. Weidenbaum, finished a two-year tour of duty yesterday, and returned to Washington University in St. Louis.

Weidenbaum, 44, will become Edward Mallinchrodt Distinguished University Professor, resuming his teaching of economics.

As Assistant Secretary of Treasury for Economic Policy, Weidenbaum will best be remembered here for his work on the President's revenue-sharing proposals.

Weidenbaum, in fact, concentrated his attention on revenue-sharing after his views on the general management of the economy began to run counter to the official Nixon line. As far back as June, 1970, Weidenbaum forthrightly told a congressional committee that some sort of wage-price incomes policy would be necessary.

Rejecting compulsory wage-price curbs, as well as less effective jawboning, Weidenbaum urged two things: a set of guideposts for acceptable wage-price behavior; and a watch-dog commission or board to spotlight offending wage-price decisions.

This is almost precisely the formula soon to be discussed in hearings sponsored by leading congressional Republicans. It's too bad the administration didn't listen then to Weidenbaum, and to Arthur Burns, whose wage-price review board proposal is much the same thing.

Weidenbaum, in his two years at the Treasury, delivered himself of other courageous observations until—practical man that he is—he decided to limit his public comments to revenue-sharing. He warned, for example, that the twin problems of inflation and unemployment could not be solved without reducing the concentration of "private economic power;" he also had the courage to suggest that the tax system be used to shift the cost of pollution from society (which now foots the bill) to the polluter.

With respect to the troubled aerospace industry, Weidenbaum (once an economist for Boeing) warned in Congressional testimony against special favors designed to employ the industry's resources for the emerging environment or other markets.

"Change is an essential aspect of a modern society," Weidenbaum declared. He didn't reject some transitional assistance to laid-off aerospace employees, but bluntly said he would "give greater weight, in post-Vietnam planning, to the needs of the lower-income veterans who are returning from Vietnam and who merit our great support and understanding."

Later, however, Weidenbaum did back a loan for Lockheed as "the most effective way" to help that hard-pressed company.

To the Administration's credit, it never pressured Weidenbaum to commit himself to programs in which he didn't believe; and Weidenbaum conducted himself in a dignified way, with no sniping at his associates, however much that might have been welcomed by Democratic critics of Mr. Nixon.

Secretary of the Treasury John B. Connally did his best to keep Weidenbaum; but the modest professor from Washington U., who never got Potomac fever, believed that his best contribution to economic knowledge would be in the academic surroundings he knows best.

Weidenbaum carefully shunned the Sans Souci circuit, and rode the bus to work instead of appropriating a Treasury car ("I don't want to get used to it," he would say).

Washington, D.C.'s loss is Washington U.'s gain. We wish him well.

THE PENTAGON PAPERS

HON. JOHN G. DOW

OF NEW YORK

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. DOW. Mr. Speaker, with your permission, I would like to append below an article entitled "The Pentagon Papers and Social Science" by Dr. Irving Louis Horowitz, editor-in-chief of the periodical Trans-action, a magazine of social science and modern society published at Rutgers University.

Since I was chairman of a recent conference sponsored by a number of Congressmen which sought to analyze the Pentagon Papers and their significance for us, I want to say that Dr. Horowitz' critique of the papers is pungent and cogent. In some respects, he pinpoints conclusions that can be drawn about the Pentagon Papers that are more nearly on target than the points brought out by our congressional conference.

Dr. Horowitz' analysis is addressed to the community of social scientists. Accordingly, it focuses on matter in the Pentagon Papers which is of direct concern to them. Yet, even with this special social science orientation, Dr. Horowitz' insights about the Pentagon Papers are among the best to be found anywhere. His article follows:

THE PENTAGON PAPERS AND SOCIAL SCIENCE

(By Irving Louis Horowitz)

Today, no major political event, particularly one so directly linked to the forging of American foreign policy as the publication of the Pentagon Papers by the *New York Times* and the *Washington Post* can be fully described without accounting for the role of the social scientist. In this case, the economists clearly performed a major role. From the straightforward hawkish prescriptions offered in 1961 by Walt W. Rostow to the dovishly motivated release of secret documents on the conduct of the war in 1971 by Daniel Ellsberg, the contributions of social scientists were central. As a consequence, it is fitting, nay imperative, that the import of these monumental events be made plain for those of us involved in the production and dissemination of social science information and insight.

The publication of the Pentagon Papers is of central importance to the social science community in at least two respects; social scientists participated in the development of a posture and position toward the Vietnam involvement; and at a more abstract level, the publication of these papers provides lessons about political participation and policy-making for the social sciences.

We live in an age in which the social sciences perform a special and unique role in the lives of men and in the fates of government, whatever be the status of social science theory. And because the questions of laymen are no longer "is social science scientific," but "what kinds of recommendations are offered in the name of social science," it is important that social scientists inquire as to any special meaning of the Pentagon Papers and documents, over and above the general and broad-ranging discussions that take place in the mass media. Thus, my effort here is not to be construed as a general discussion of issues, but rather a specific discussion of results.

I. FINDINGS

The Pentagon's project director for a History of United States Decision-Making Process on Vietnam Policy (now simply known as The Pentagon Papers), economist Leslie H. Gelb now of Brookings, remarked: "Writing history, especially where it blends into current events, especially where the current event is Vietnam, is a treacherous exercise." Former Secretary of Defense Robert S. McNamara authorized this treacherous exercise of a treacherous conflict in 1967. In initiation and execution this was to be "encyclopedic and objective." The actual compilations runs to 2.5 million words and 47 volumes of narratives and documents. And from what has thus far been made public, it is evident that this project was prepared with the same bloodless, bureaucratic approach that characterizes so much federally inspired, social science and history. The Pentagon Papers attempt no original hypothesis, provide no insights into the behavior of the "other side," make scant effort to select important from trivial factors in the escalation process; they present no real continuity with past American foreign policy and in general eschew any sort of systematic survey research or interviewing of the participants and proponents. Yet, with all these shortcomings, these materials offer a fascinating and unique account of how peace-keeping agencies became transformed into policy-making agencies. That this record was prepared by 36 political scientists, economists, systems analysts, inside dopesters and outside social science research agencies provides an additional fascination: how the government has learned to entrust its official records to mandarin types, who in exchange for the cloak of anonymity are willing to prepare an official record of events. An alarming oddity is that, in part at least, the chronicle was prepared by analysts who were formerly participants.

For those who have neither the time nor the patience to examine every document thus far released, it might be worthwhile to simply summarize what they contain. In so doing it, becomes clear that the Vietnam War was neither a Democratic nor a Republican war, but a war conducted by the political elite, often without regard to basic technical advice and considerations, and for reasons that had far less to do with curbing communism than with the failure of the other arms of government in their responsibility to curb executive egotism. The publication of these papers has chronicled this country's overseas involvement with a precision never before available to the American public. Indeed, we now know more about decision-making in Vietnam than about the processes by which we became involved in the Korean War. For instance, we have learned that:

1. The United States ignored eight direct appeals for aid from Ho Chi Minh in the first half-year following World War II. Underlying the American refusal to deal with the Vietnamese leader was the growth of the cold war and the opposition to assisting a communist leadership.

2. The Truman administration by 1949 had already accepted the "domino principle," after the National Security Council was told early in 1950 that the neighboring countries of Thailand and Burma could be expected to fall under communist control if Vietnam were controlled by a communist dominated regime.

3. The Eisenhower administration, particularly under the leadership of Secretary of State John Foster Dulles, refused to accept the Geneva accords ending the French-Indochina war on the grounds that it permitted this country "only a limited influence" in the affairs of the fledgling South Vietnam. Indeed, the Joint Chiefs of Staff opted in favor of displacing France as the key influence rather than assisting the termination of hostilities.

4. The final years of the Eisenhower administration were characterized by a decision to commit a relatively small number of United States military personnel to maintain the Diem regime in Saigon and to prevent a détente between Hanoi and Saigon.

5. The Kennedy administration transformed the limited risk gamble into an unlimited commitment. Although the troop levels were indeed still quite limited, the Kennedy administration moved special forces units into Vietnam, Laos and Cambodia—thus broadening the conflict to the area as a whole.

6. The Kennedy administration knew about and approved of plans for the military coup d'état that overthrew President Diem. The United States gave its support to an army group commited to military dictatorship and no compromise with the Hanoi regime.

7. The Johnson administration extended the unlimited commitment to the military regime of Saigon. Under this administration between 1965 and 1968, troop levels surpassed 500,000 and United States participation was to include the management of the conflict and the training of the ARVN.

8. After the Tet offensive began in January 1968, Johnson, under strong prodding from the military Chiefs of Staff, and from his field commanders, moved toward full scale mobilization, including the call-up of reserves. By the termination of the Johnson administration, the United States had been placed on a full-scale war footing.

Among the most important facts revealed by the Papers is that the United States first opposed a settlement based on the Geneva accords, signed by all belligerents; that the United States had escalated the conflict far in advance of the Gulf of Tonkin incident and had used congressional approval for legitimating commitments already undertaken rather than as a response to new communist provocations; and finally that in the face of internal opposition from the same Department of Defense that at first had sanctioned the war, the executive decided to disregard its own policy advisers and plunge ahead in a war already lost.

II. DECISIONS

Impressive in this enumeration of policy decisions is the clinical way decisions were made. The substitution of war game thinking for any real political thinking, the total submssion of the Department of State to the Department of Defense in the making of foreign policy, and the utter collapse of any faith in compromise, consensus or cooperation between nations, and the ludicrous pursuit of victory (or at least non-defeat) in Vietnam, all are so forcefully illustrated in these Pentagon Papers, that the vigor with which their release was opposed by the Attorney General's office and the executive branch of government generally, can well be appreciated.

Ten years ago in writing *The War Game* I had occasion to say in a chapter concerning "American Politics and Military Risks" that "a major difficulty with the thinking of the new civilian militarists is that they study war while ignoring politics." The recent disclosure of the Pentagon Papers bears out that contention with a vengeance; a kind of hot house scientology emerges, in which the ends of foreign policy are neatly separated from the instruments of immediate destruction. That a certain shock and cynicism have emerged as a result of the revelations in these papers is more attributable to the loss of a war than to the novelty of the revelations. The cast of characters that have dragged us through the mire of a bloody conflict in Southeast Asia, from Walt W. Rostow to Henry A. Kissinger, remain to haunt us and taunt us. They move in and out of administrations with an ease that belies political party differences and underscores the existence of not merely a set of "experts," but rather a well defined ruling class dedicated to manufacturing and manipulating political formulas.

The great volume of materials thus far revealed is characterized by few obvious themes: but one of the more evident is the utter separation of the purposes of devasta-

tion from comprehension of the effects of such devastation. A kind of Howard Johnson sanitized vision of conflict emerges that reveals a gulf between the policy-makers and battlefield soldiers that is even wider and longer than the distance between Saigon and Washington. If the concept of war gaming is shocking in retrospect, this is probably due more to its utter and contemptible failure to provide battlefield victories than to any real development in social and behavioral science beyond the shibboleths of decision theory and game theory.

III. "SCIENTISTS"

A number of researchers as well as analysts of the Pentagon Papers were themselves social scientists. There were political scientists of considerable distinction, such as Morton Halperin and Melvin Gurtov; economists of great renown, such as Walt W. Rostow and Daniel Ellsberg; and systems analysts, such as Alain Enthoven. And then there was an assorted group of people, often trained in law, such as Roger Fisher and Carl Kaysen, weaving in and out of the Papers, providing both point and counterpoint.

There are the thoroughly hawkish views of Walt Rostow; and the cautionary perspective of Alain Enthoven; and the more liberal recommendations of people like Roger Fisher. But it is clear that social scientists descend in importance as they move from hawk to dove. Walt Rostow is a central figure, and people like Carl Kaysen and Roger Fisher are at most peripheral consultants—who in fact, seem to have been more often conservatized and impressed by the pressurized Washington atmosphere than to have had an impact on the liberalization or softening of the Vietnam posture.

The social scientific contingency in the Pentagon, whom I christened the "new civilian militarists" a decade ago, were by no means uniform in their reactions to the quagmire in Vietnam. Political scientists like Morton H. Halperin and economists like Alain C. Enthoven did provide cautionary responses, if not outright criticisms of the repeated and incessant requests for troop build-ups. The Tet offensive, which made incontrovertible the vulnerability of the American posture, called forth demands for higher troop levels on the part of Generals William C. Westmoreland and Maxwell Taylor. Enthoven, in particular, opposed this emphatically and courageously:

"Our strategy of attrition has not worked. Adding 206,000 more U.S. men to a force of 525,000, gaining only 27 additional maneuver battalions and 270 tactical fighters at an added cost to the U.S. of $10 billion per year raises the question of who is making it costly for whom. . . . We know that despite a massive influx of 500,000 U.S. troops, 1.2 million tons of bombs a year, 200,000 enemy killed in action in three years, 20,000 U.S. killed in action in three years, 200,000 U.S. wounded in action, etc., our control of the countryside and the defense of the urban areas is now essentially at pre-August 1965 levels. We have achieved stalemate at a high commitment. A new strategy must be sought."

Interestingly, in the same month, March 1968, when Enthoven prepared this critical and obviously sane report, he wrote a curious paper on "Thomism and the Concept of Just and Unjust Warfare," which, in retrospect, seemed to be Enthoven's way of letting people like myself know that he was a dissenting voice despite his earlier commitment to war game ideology and whiz-kid strategy.

As a result of these memoranda, Assistant Defense Secretary Paul Warnke argued against increased bombing and for a bombing pause. He and Assistant Secretary of Defense for Public Affairs, Phil G. Goulding, were then simply directed to write a draft that "would deal only with the troop issue;" hence forcing them to abandon the internal fight against an "expansion of the air war." And as it finally went to the White House, the report was bleached of any criticism. The mandarin role of the social scientists was reaffirmed: President Johnson's commitments went unchallenged. The final memo advocated deployment of 22,000 more troops, reserved judgment on the deployments of the remaining 185,000 troops and approved a 262,000 troop reserve build-up; it urged no new peace initiatives and simply declared that a division of opinion existed on the bombing policy, making it appear that the division in opinion was only tactical in nature. As the Pentagon Papers declared:

Faced with a fork in the road of our Vietnam policy, the working group failed to seize the opportunity to change directions. Indeed, they seemed to recommend that we continue rather haltingly down the same road, meanwhile, consulting the map more frequently and in greater detail to insure that we were still on the right road.

One strange aspect of this war game strategy is how little the moves and motives of the so-called "other side" were ever taken into account. There is no real appreciation of the distinction between North Vietnam and the National Liberation Front of South Vietnam. There is not the slightest account taken of the actual decisions made by General Giap or Chairman Ho. The Tet offensive seems to have taken our grand strategists by as much surprise as the political elites whom they were planning for. While they were beginning to recognize the actual balance of military forces, Wilfred Burchett had already declared, in 1967 to be exact, that the consequences of the war were no longer in doubt—United States involvement could not forestall a victory of the communist factions North and South.

Thus, not only do the Pentagon Papers reveal the usual ignorance of the customs, languages and habits of the people being so brutally treated, but also the unanticipated arrogance of assuming throughout that logistics would conquer all. Even the doves like George W. Ball never doubted for a moment than an influx of a certain number of United States troops would in fact swing the tide of battle the way that General Westmoreland said it would. The argument was rather over tactics: is such a heavy investment worth the end results? In fact, not one inner circle "wise man" raised the issue that the size of the troop commitment might be basically irrelevant to the negative (from an American viewpoint) outcome of the Southeast Asia operations. One no longer expects good history or decent ethnography from those who advise the rulers, but when this is compounded with a heavy dose of impoverished war gaming and strategic thinking in the void, then the question of "science for whom" might well be converted into the question of "what science and by whom."

All of this points up a tragic flaw in policy-making by social science experts. Their failure to generate or to reflect a larger constituency outside of themselves made them continually vulnerable to assaults from the military and from the more conservative sectors of the Pentagon. This vulnerability was so great that throughout the Pentagon Papers, one senses that the hawk position is always and uniformly outspoken and direct, while the dove position is always and uniformly ubiquitous and indirect. The basis of democratic politics has always been the mass participation of an informed electorate. Yet it was precisely this informed public, where a consensus against the war had been building, that was cut off from the policy-planners and recommenders. Consequently they were left in pristine isolation to pit their logic against the crackpot realism of their military adversaries within the bowels of government.

IV. DISCLOSURES

Certain serious problems arose precisely because of the secrecy tag: for example, former Vice President Hubert Humphrey and Secretary of State Dean Rusk have both denied having any knowledge whatsoever of these papers. Dean Rusk went so far as to say that the research methodology was handled poorly: "I'm rather curious about why the analysts who put this study together did not interview us, particularly when they were attributing attitudes and motives to us." (*New York Times*, Saturday, July 3, 1971.) Perhaps more telling is Dean Rusk's suggestion that the Pentagon Papers have the characteristics of an anonymous letter. Along with Dean Rusk, I too believe that the names of the roughly 40 scholars connected with the production of these papers should be published.

To do otherwise would not only prevent the people involved from checking the veracity of the stories attributed to them, but more important, would keep the social science community from gaining a clearer insight into the multiple roles of scholars, researchers, professors and government analysts and policy-makers. The nature of science requires that the human authorities behind these multi-volumes be identified, as in the precedent established by the identification of the authors of the various bombing surveys done after World War II and the Korean War.

One serendipitous consequence of the Pentagon Papers has been to provide a more meaningful perspective toward the proposed "Code of Ethics" being advanced by so many social science professional associations. They all deal with the sanctity of the "subject's rights." All sorts of words guarding privacy are used: "rights of privacy and dignity," "protection of subjects from personal harm," "preservation of confidentiality of research data." The American Sociological Association proposals for example are typical:

Confidential informaiton provided by a research subject must be treated as such by the sociologist. Even though research information is not a privileged communication under the law, the sociologist must, as far as possible, protect subjects and informants. Any promises made to such persons must be honored. . . . If an informant or other subject should wish, however, he can formally release the promise of confidentiality.

While the purpose of this code of ethics is sincerely geared to the protection of individuals under study, if taken literally, a man like Daniel Ellsberg would be subject to penalty, if not outright expulsion, on the grounds that he was never allowed by the individuals concerned to make his information public. What so many professional societies forget is that the right to full disclosure is also a principle, just as significant as the right of the private subject to confidentiality, and far more germane to the tasks of a social scientific learned society. The truly difficult ethical question comes not with the idea of maintaining confidentiality, but with determining what would be confidential, and when such confidentialty should be violated in terms of a higher principle. All social science codes of ethics presume an ethical standpoint which limits scientific endeavor, but when it is expedient to ignore or forget this ethical code, as in the case of the Pentagon Papers, the profession embarrassingly chooses to exhibit such a memory lapse.

The publication of the Pentagon Papers should once again point the way to the highest obligation of social science organizations: to the truth, plain and simple, rather than the preservation of confidentiality, high and mighty. And unless this lesson is fully drawn, a dichotomous arrangement will be made between making public the documents of public servants whose policies they disapprove of and keeping private the documentation on deviants whom supposedly the social scientists are concerned with protecting. This is not an ethical approach but an opportunistic approach. It rests on political and

professional expediency. The need therefore is to reassert the requisites of science for full disclosure, and the ethics of full disclosure as the only possible ethics for any group of professional scientists. If the release of the Pentagon Papers has done nothing else, it has reaffirmed the highest principle of all science: full disclosure, full review of the data, full responsibility for what is done, by those who do the research.

V. SECRETS

Another area that deeply concerns the social scientist and that is highlighted in the Pentagon Papers is the government's established norms of secrecy. While most officials in government have a series of work norms with which to guide their behavior, few forms of anticipatory socialization have applied to social scientists who advise government agencies. The professionalization of social scientists has normally been directed toward publicity rather than secrecy. This fosters sharp differences in opinion and attitudes between the polity and the academy, since the reward system for career advancement is so clearly polarized.

The question of secrecy is intimately connected with matters of policy, because the standing assumption of policy-makers (particularly in the field of foreign affairs) is not to reveal themselves entirely. No government in the game of international politics feels that its policies can be candidly revealed for full public review; therefore, operational research done in connection with policy considerations is customarily bound by the canons of government privacy. But while scientists have a fetish for publicizing their information as a mechanism for professional advancement no less than as a definition of their essential role in the society, the political branches of society have as their fetish the protection of private documents and privileged information. Therefore, the polity places a premium not only on acquiring vital information, but on maintaining silence about such information precisely to the degree that the data might be of high decisional value. This leads to differing premiums between analysts and policy-makers and to tensions between them.

Social scientists complain that the norm of secrecy oftentimes involves yielding their own essential work premises. A critical factor reinforcing an unwilling acceptance of the norm of secrecy by social scientists is the allocation of most government research funds for military or semi-military purposes. Senate testimony has shown that 70 percent of federal funds targeted for the social sciences involve such restrictions.

The real wonder turns out to be not the existence of the secrecy norm but the relative availability of large chunks of information. Indeed, the classification of materials is so inept that documents (such as the Pax America research) designated as confidential or secret by one agency may often be made available as a public service by another agency. There are also occasions when documents placed in a classified category by sponsoring government agencies can be gotten without charge from the private research institute doing the work.

But the main point is that the norm of secrecy makes it extremely difficult to separate science from patriotism and hence makes it that much more difficult to question the research design itself. Social scientists often express the nagging doubt that accepting the first stage—the right of the government to maintain secrecy—often carries with it acquiescence in a later stage—the necessity for silence on the part of social researchers who may disagree with the political uses of their efforts.

The demand for government secrecy has a telling impact on the methodology of the social sciences. Presumably social scientists are employed because they, as a group, represent objectivity and honesty. Social scientists like to envision themselves as a wall of truth off which policymakers may bounce their premises. They also like to think that they provide information which cannot be derived from sheer public opinion. Thus, to some degree social scientists consider that they are hired or utilized by government agencies because they will say things that may be unpopular but nonetheless significant. However, since secrecy exists, the premises upon which most social scientists seek to work are strained by the very agencies which contract out their need to know.

The terms of research and conditions of work tend to demand an initial compromise with social science methodology. The social scientist is placed in a cognitive bind. He is conditioned not to reveal maximum information lest he become victimized by the federal agencies that employ his services. Yet he is employed precisely because of his presumed thoroughness, impartiality and candor. The social scientist who survives in government service becomes circumspect or learns to play the game. His value to social science becomes seriously jeopardized. On the other hand, once he raises these considerations, his usefulness to the policy-making sector is likewise jeopardized.

Social scientists believe that openness is more than meeting formal requirements of scientific canons; it is also a matter of making information universally available. The norm of secrecy leads to selective presentation of data. The social scientist is impeded by the policy-maker because of contrasting notions about the significance of data and the general need for replication elsewhere and by others. The policy-maker who demands differential access to findings considers this a normal return for the initial expenditure of risk capital. Since this utilitarian concept of data is alien to the scientific standpoint, the schism between the social scientist and the policy-maker becomes pronounced precisely at the level of openness of information and accessibility to the work achieved. The social scientist's general attitude is that sponsorship of research does not entitle any one sector to benefit unduly from the findings—that sponsorship by federal agencies ought not place greater limitations on the use of work done than sponsorship by either private agencies or universities.

VI. LOYALTIES

A major area that deeply concerns social scientists is that of dual allegiance. The Pentagon Papers have such specific requirements and goal-oriented tasks that they intrude upon the autonomy of the social scientist by forcing upon him choices between dual allegiances. The researcher is compelled to choose between participating fully in the world of the federal bureaucracy or remaining in more familiar academic confines. He does not want the former to create isolation in the latter. Thus, he often criticizes the federal bureaucracy's unwillingness to recognize his basic needs: 1) the need to teach and retain full academic identity; 2) the need to publicize information; and above all 3) the need to place scientific responsibility above the call of patriotic obligation—when they may happen to clash. In short, he does not want to be plagued by dual or competing allegiances.

The norm of secrecy exacerbates this problem. Although many of the social scientists who become involved with federal research are intrigued by the opportunity to address important issues, they are confronted by some bureaucracies which oftentimes do not share their passion for resolving social problems. For example, federal obligations commit the bureaucracy to assign high priority to items having military potential and effectiveness and low priorities to many supposedly idealistic and far-fetched themes in which social scientists are interested.

Those social scientists, either as employees or as consultants connected with the government, are hamstrung by federal agencies which are in turn limited by political circumstances beyond their control. A federal bureaucracy must manage cumbersome, overgrown committees and data gathering agencies. Federal agencies often protect a status quo merely for the sake of rational functioning. They must conceive of academicians in their midst as a standard bureaucratic type entitled to rise to certain federal ranks. Federal agencies limit innovating concepts to what is immediately useful, not out of choice and certainly not out of resentment of the social sciences but from what is deemed as impersonal necessity. This has the effect of reducing the social scientist's role in the government to that of ally or advocate rather than innovator or designer. Social scientists begin to feel that their enthusiasm for rapid change is unrealistic, considering how little can be done by the government bureaucracy. And they come to resent involvement in theoryless application to immediacy foisted on them by the "new utopians," surrendering in the process the value of confronting men with the wide range of choices of what might be done. The schism, then, between autonomy and involvement is as thorough as that between secrecy and publicity, for it cuts to the quick well-intentioned pretensions at human engineering.

The problem of competing allegiances is not made simpler by the fact that many high ranking federal bureaucrats have strong nationalistic and conservative political ideologies. This contrasts markedly with the social scientist, who comes to Washington not only with a belief in the primacy of science over patriotism but also with a definition of patriotism that is more open-ended and consciously liberal than that of most appointed officials. Hence, he often perceives the conflict to extend beyond research design and social applicability into one of the incompatible ideologies held respectively by the social scientist and entrenched Washington bureaucrats. He comes to resent the proprietary attitude of the bureaucrat toward "his" government processes. The social scientist is likely to consider his social science biases a necessary buffer against the federal bureaucracy.

VII. ELITISTS

The publication of the Pentagon Papers sheds new light on political pluralist and power concentrationist hypotheses. When push finally did turn to shove, President Nixon and the government officials behaved as members of a ruling class and not as leaders of their political party. President Nixon might easily have chosen to let the Democratic party take the burn and bear the brunt of the assaults for the betrayal of a public trust. Indeed the Nixon administration might have chosen to join the chorus of those arguing that the Democratic party is indeed the war party, as revealed in these documents; whereas the Republican party emerges as the party of restraint—if not exactly principle.

Here was a stunning opportunity for Mr. Nixon to make political capital at a no risk basis: by simply drawing attention to the fact that the war was constantly escalated by President Truman, who refused to bargain in good faith with Ho Chi Minh despite repeated requests, by President Kennedy, who moved far beyond anything President Eisenhower had in mind for the area, by making the fatal commitment not just to land troops but to adopt a domino theory of winning the war, by President Johnson, whose role can well be considered as nefarious: coming before the American people as a peace candidate when he had already made the fatal series of commitments to continuing escalation and warfare. That the president chose not to do so illustrates the sense of class solidarity that the political elites in this country manifest; a sense of collective betrayal of the priesthood, rather than a

sense of obligation to score political points and gain political trophies. And that too should be a lesson in terms of the actual power within the political structure of a small ruling elite. Surely this must be considered a fascinating episode in its own right: the reasons are complex, but surely among them must rank the belief that Mr. Nixon behaved as a member of the ruling elite, an elite that had transcendent obligations far beyond the call of party, and that was the call of class.

One fact made clear by the Pentagon Papers is the extent to which presidentialism has become the ideology and the style in American political life. The infrequency of any reference to the judicial situation with respect to the war in Southeast Asia and the virtual absence of any reference to congressional sentiments are startling confirmations of an utter change in the American political style. If any proof was needed of the emerging imbalance between the executive and other branches of government, these papers should put such doubt to rest. The theory of checks and balances works only when there are, in fact, groups such as senators or stubborn judges who believe in the responsibility of the judiciary and legislative branches to do just that, namely, establish check and balance. In the absence of such vigor, the war in Southeast Asia became very much a series of executive actions. And this itself should give pause to the advocates of consensus theory in political science.

The failure of the Vietnam episode has resulted in a reconsideration of presidentialism as the specific contemporary variant of power elite theory. The renewed vigor of Congress, the willingness, albeit cautionary willingness of the Supreme Court to rule on the fundamental points of constitutional law, are indicative of the resurgence of pluralism. In this sense, the darkest hour of liberalism as a political style has witnessed a liberal regrouping around the theme of mass politics. Even the domestic notions of community organization and states rights are indicative of the limits of presidentialism—so that Mr. Nixon, at one and the same time, is reluctantly presiding over the swan song of presidentialism in foreign affairs, while celebrating its demise in domestic affairs.

The collapse of the Vietnam War and the trends toward neo-isolationism are in fact simply the reappearance of political pluralism in a context where to go further in the concentration of political power in the presidency would in all likelihood mean the upsurge of fascism, American style. If the concept of a power elite was reconfirmed in the Pentagon Papers, so too, strangely, was the concept of political pluralism in the public response to them. The countervailing influence of the Supreme Court was clearly manifested in the ringing affirmation of the First Amendment, in the denial of the concept of prior restraint and prior punitive actions, and in the very rapidity of the decision itself. This action by the judiciary, coupled with a show of muscle on the part of the Senate and House concerning the conduct of the war, military appropriations, boondoggles and special privileges for a select handful of aircraft industries in their own way served to underscore the continued importance of the open society and the pluralistic basis of power. Even executives, such as Hubert H. Humphrey, have declared in favor of full disclosure and reiterated the principles guiding the publication of the Pentagon Papers.

Power elites operate behind a cloak of anonymity. When that cloak is lifted, an obvious impairment in the operational efficiency of elites occurs. What has happened with the release of the Pentagon Papers is precisely this collapse of anonymity, no less than secrecy. As a result, the formal apparatus of government can assert its prerogatives. This does not mean that the executive branch of government will be unable to recover from this blow at its prestige, or that it will no longer attempt to play its trump card: decision-making by executive fiat. It does mean, however, that the optimal conditions under which power elites operate have been seriously hampered. The degree of this impairment and the length of time it will obtain depend exclusively on the politics of awareness and participation, no less than the continuing pressures for lowering the secrecy levels in high level international decision-making.

Probably the most compelling set of reasons given for President Nixon's bitter opposition to the release of the Pentagon Papers is that provided by Melvin Gurtov, one of the authors of the secret Pentagon study and an outstanding political scientist specializing in Asian affairs. He speaks of three deceits in current American Vietnamese policy: "The first and most basic deceit is the Administration's contention that we're winding down and getting out of the war." In fact, Vietnamization is a "domestic political ploy that really involves the substitution of air power for ground power."

The second deceit is that "we're truly interested in seeing the prisoners of war released." Gurtov notes that "as far as this administration is concerned the prisoners of war are a political device, a device for rationalizing escalation, by saying these are acts that are necessary to show our concern for the prisoners." The third deceit "is that under the Nixon Doctrine the United States is not interested in making new commitments in Asia." In fact, the administration used the Cambodia coup "as an opportunity for creating for itself a new commitment in Southeast Asia, namely the survival of a non-Communist regime in Pnompenh." This outspoken position indicates that the defense of the power elite of the past by President Nixon might just as well be construed as a self-defense of the power elite in the present.

VIII. CONSPIRACIES

The Pentagon Papers provide much new light on theories of power elite and power diffusion and also provide an equal measure of information on conspiracy theory. And while it is still true that conspiracy *theory* is bad theory, it is false to assert that no conspiracies exist or are not perpetrated by the government. It might indeed be the case that all governments, insofar as they are formal organizations, have secrets; and we call these secrets, conspiracies. From this point of view, the interesting question is how so few leaks resulted from an effort of such magnitude and involving so many people as setting policy in the Vietnam War. Rather than be surprised that these papers reached the public domain four to six years after the fact, one should wonder how the government was able to maintain silence on matters of such far-ranging and far-reaching consequence.

Cyrus Eaton, American industrialist and confidant of many communist leaders, indicates that the Vietnamese almost instantaneously were made aware of United States policy decisions. But I seriously doubt that they actually had copies of these materials. Rather, like the American public itself, they were informed about the decisions but not the cogitations and agitations that went into the final decision. Perhaps this is the way all governments operate; nonetheless, it is fascinating—at least this once—to be privy to the process and not simply the outcome, and to see the foibles of powerful men and not just the fables manufactured for these men after the fact.

These papers tend to underwrite the common-sensical point of view that governments are not to be trusted, and to undermine the more sophisticated interpretation that governments are dedicated to the task of maintaining democracy at home and peace abroad. As bitter as it may seem, common sense cynicism has more to recommend it than the sophisticated, well elaborated viewpoints which take literally the formal structure of government and so readily tend to dismiss the informal response to power and pressure from men at the top.

The constant wavering of Lyndon B. Johnson, his bellicose defiance of all evidence and information that the bombings were not having the intended effect, followed by shock that his lieutenants like Robert McNamara changed their position at midstream (which almost constituted a betrayal in the eyes of the president) were in turn followed by a more relaxed posture and a final decision not to seek the presidency. All of this forms a human drama that makes the political process at once fascinating and frightful; fascinating because we can see the psychology of politics in action, and frightful because the presumed rationality is by no means uniformly present.

The publication of the Pentagon Papers, while a considerable victory for the rights of a free press and of special significance to all scientists who still uphold the principle of full disclosure as the norm of all political as well as scientific endeavor, is not yet a total victory for a democratic society—that can only happen when the concept of secrecy is itself probed and penetrated, and when the concept of undeclared warfare is finally and fully repudiated by the public and its representatives. The behavior of the government in its effort to suppress publication of the Pentagon Papers cannot simply be viewed as idiosyncratic, but rather as part of the structure of the American political processes in which the expert displaces the politician, and the politicians themselves become so beholden to the class of experts for information, that they dare not turn for guidance to the people they serve. For years, critics of the Vietnam War have been silenced and intimidated by the policy-makers' insistence that when all the facts were known the hawk position would be vindicated and the dove position would be violated. Many of the facts are now revealed—and the bankruptcy of the advocates of continued escalation is plain for all to see. Hopefully, this will strengthen the prospects for peace, and firm up those who, as an automatic reflex, assume the correctness of the government's position on all things military. It is to be hoped that the principle of democracy, of every person counting as one, once more becomes the source of fundamental decision-making and political discourse.

AEROSPACE UNEMPLOYMENT

HON. JEROME R. WALDIE

OF CALIFORNIA

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. WALDIE. Mr. Speaker, the State of California has experienced great economic difficulties as a result of the current recession. Unemployment has soared to record heights and industrial activity has dropped sharply. Bearing the burden of joblessness and business losses is the aerospace industry.

An August 5, 1971, article printed in the Manchester Guardian provides a perceptive analysis of the effects of this economic crisis on the aircraft industry. It describes the extensive unemployment of aerospace technicians, the difficulty they experience in finding other jobs which employ their skills and their resultant emigration from California.

The article follows:

[From the Manchester Guardian, Aug. 5, 1971]

CALIFORNIA EXPORTS PEOPLE AS AIR INDUSTRY FALTERS

(By John O'Callaghan)

California's population used to grow by 1,000 immigrants a day. Now, for the first time, the State is exporting people and expects a net loss this year. By saving the Lockheed TriStar, the American Government has only prevented bad unemployment in the Pacific coast aircraft industry from assuming disastrous proportions. A quarter of America's aerospace workers live on the West Coast where jobs have gone down from 615,000 in 1967 to 435,000, a drop of nearly 30 per cent.

There has been a 16 per cent drop since this time last year. In Seattle, where Boeing has its plant, 105,700 workers in July, 1968, dwindled to 39,400 in May of this year, and unemployment is 12 per cent. In Los Angeles local unemployment is 7½ per cent. The upper target limit for unemployment in America is 4 per cent.

About a quarter of those made redundant by reduced defence spending and a blank future in commercial aviation are highly trained technical workers. Those who came to California as part of the brain drain from Europe are going back. Germany has vacancies for its own nationals, and for Americans too. Secor Browne, chairman of the American Civil Aeronautics Board, said last week: "Other Governments are buying our brains and therefore our technology."

Most of the displaced men are not leaving the State. Almost all are cushioned for between six and nine months by payments from voluntary contributory schemes but after the effect has worn off, a skilled engineer drops from £120 a week to £26 a week.

At the moment courses in law and creative writing are filled to overflowing according to Mr. Kaye Kiddoo, Lockheed's labour director: "We are just beginning to feel the first big hurt in unemployment," he said. Cuts in employment have lagged behind falling business. Last year's drop in business was only 5 per cent, but 15 per cent of the workers lost their jobs.

Those not embarking on study are taking ordinary clerical jobs in the hope that, as so often in the past, the aerospace industry will pick up. But Mr. Kiddoo, a believer in the cyclical character of international crises likely to induce more Government defense spending, can see no better prospect than that business will soon level out at about present figures. Lockheed thinks that civil aviation will grow at 10 per cent a year in this decade as compared with the exceptional 14 per cent in the sixties.

AFFLUENCE

Those dismissed by Lockheed are warned that it might be better to make a radical change. In Los Angeles a group called Task Force for the Re-employment of engineers has started giving advice to men, hitherto the elite in a seller's market, on the skills of finding and securing a new job—and they are having to be taught how to write a career synopsis.

Employers are said to look askance here at aircraft workers for being overpaid, and inbred. Whatever truth there is in this—very little in Lockheed's opinion—the industry has now lost so much of its glamour that enrollments for aeronautical and allied engineering places at universities have dropped substantially.

For the West Coast the signs and portents are gloomy, and new. The area's ability to sustain serious unemployment has never been tested, and its whole free-way based infrastructure is geared to nothing but affluence.

So alarming has the situation become that the unions at Lockheed have allowed the ending of their three year contracts to go by unremarked. When the loan guarantee came through the Senate this week the president of the machinists' union rang Lockheed and said, "All right you've got the $100 millions to pay us higher wages: What are you going to do about paying for the aircraft?"

"We think," said Dr. Harry Biedermann, Lockheed's senior economist, "that he was joking."

ASSURED SURVIVAL

HON. JOHN G. SCHMITZ

OF CALIFORNIA

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. SCHMITZ. Mr. Speaker, the following article appeared as chapter 6 of an excellent new book on the U.S. military posture entitled, "The Strategy of Technology: Winning the Decisive War," coauthored by Dr. Stefan T. Possony and Dr. J. E. Pournelle. Both these men have had practical experience in the field of strategic weaponry and an excellent grasp of the general theoretical considerations which underlie any defense posture.

This chapter of the book argues for the adoption of a U.S. defense posture which they characterize as "assured survival" in opposition to the posture of spasm response against Soviet civilians known as "assured destruction." President Nixon indicated that he, too, was opposed to the doctrine known as "assured destruction" when he commented in his last state of the world message that—

I must not be—and my successors must not be—limited to the indiscriminate mass destruction of enemy civilians as the sole possible response to challenges.

However the administration has not taken the steps necessary to unchain us from the posture of spasm response. The only difference between today and 5 years ago as far as our strategy goes is that instead of delivering a massive bang in retaliation for a Soviet strike on the United States we may be able to manage only a feeble burp.

Dr. Donald G. Brennan of the Hudson Institute has characterized our past and present posture of mutual assured destruction as, "almost literally, mad, mad" and goes on to discuss some of its drawbacks:

The first is that, in spite of our best efforts, a major nuclear war could happen. An institutionalized MAD posture is a way of insuring, now and forever, that the outcome of such a war would be a nearly unlimited disaster for everybody. While technology and politics may conspire for a time to leave us temporarily in such a posture, we should not welcome it—we should rather be looking for ways out of it. And they can be found.

The second fundamental difficulty is, in essence, political: The body politic of the United States did not create a Department of Defense for the purpose of deliberately making us all hostages to enemy weapons. The Government is supposed, according to the Constitution, to "provide for the common defense," and plainly most Americans would revolt at the idea that a mined-city system is a sensible way to do this. They would be quite right. The Defense Department should be more concerned with assuring live Americans than dead Russians.

The third fundamental difficulty is moral. We should not deliberately create a system in which millions of innocent civilians would, by intention, be exterminated in a failure of the system. The system is not that reliable. If we accept a MAD posture as an interim solution, we should be seeking ways out of it, not ways to enshrine it.

It is difficult to disagree with Dr. Brennan. Drs. Possony and Pournelle argue that in order to exchange a policy of assured survival for that of assured destruction we need, "active defenses coupled with sufficient counterforce capability to threaten the enemy's residual or holdback forces." The holdback forces they are referring to are the 900 SS–11's and 100 SS–13's—both similar to our Minuteman—which the Soviets currently have deployed.

Some people seem to have confused counterforce weaponry with a first strike posture. While a first strike posture necessarily includes counterforce weapons, this does not mean that possession of counterforce weapons gives one a first strike capability. Those who downgrade the Soviets' ability to achieve a first strike capability because of either the nature of our triad system precluding successful elimination of all three parts of our deterrent through a first strike—the Soviets also have a triad posture—or the fact that the Soviets do not have the quantity of missiles necessary for a successful first strike at this point, imply this when speaking against modest improvements in the U.S. forces. That is, they imply that it is possible to have counterforce weapons without necessarily having a first strike capability. A level of U.S. counterforce weaponry which is not sufficient to reduce the Soviets' retaliatory capability to the point where they would not have sufficient forces remaining to render unacceptable damage to the United States, basically any nuclear damage to our civilian population whatsoever, is not a first strike posture and cannot therefore be considered either provocative, destabilizing, or in any way jeopardizing successful arms control negotiations.

Failure to construct damage-limiting forces capable of foreclosing the option the Soviets are fast developing of holding back an SS–11, SS–13, countercity reserve force in conjunction with a devastating first strike in order to compel U.S. capitulation encourages Soviet planners to continue constructing just such a force. While this option may never be exercised, why open up the possibility that it will by limiting our own forces capability to deny them the capability to successfully utilize this particular attack pattern?

A very good point was made in the congressional colloquy which took place last August 4 in an essay read into the RECORD by my colleague Hon. JOHN HUNT. Speaking in regard to the SALT talks, Prof. Morton Kaplan of the Committee on International Relations of the University of Chicago stated that—

People treat the arms race as if the proper analogy would be poker. They assume that finite deterrents will work under all circumstances, that no objective is likely to justify the Soviet's use of first strike and that

the world will develop in benign directions. Therefore they wish to place their bets on the probably winning hand. Yet the more appropriate analogy would be that of Russian roulette. It could be pointed out in defense of Russian roulette that there is only one chance in six that the chamber will have a bullet in it and the person be killed. Yet any sensible person would refuse to play the game in the first place. The truth is that we live in a world with one history, that we are seldom able to correct past mistakes, and that a catastrophe will be irrevocable. In this kind of world, a relatively small payment to insure that the game is not one of Russian roulette would be quite worthwhile, even if we could be assured that there are forty chambers to the gun and that only one chamber will have a bullet in it.

As any intelligent and honest social scientist will admit, we are unable to predict the future and many surprises will occur. In a regime or bloc crisis, a first strike against the United States might prove tempting to the Soviet Union, provided that some reasonable calculations could be provided by the Soviet high command."

The probability of successful Soviet attack increases the possibility that such an attack will be launched. By failing to include a damage limiting capability within our general force posture we are opening up an avenue for possible successful attack. We are engaging in what Professor Kaplan rightly calls Russian roulette on a national scale.

The arms race argument against active defense measures is successfully refuted on all points in the article which follows. I might point out that those who argue against the ABM by projecting a Soviet reaction to our defence of our strategic offensive land based missile force by increasing their own strategic offensive missile force not only imply that the Soviets are building nuclear rocket weapons in a quantity necessary to destroy our forces but also that we should allow them to achieve such a capability.

In the event of a Soviet strike we must have a surviving war fighting capability capable of disarming the enemy. This is consonant both with Christian ethics, the doctrine of just war, and obviously in the interests of our survival as a free nation. The genocidal strategy of assured destruction first generated by McNamara theorists and now determined by our weakness relative to the Soviet Union must be discarded for a strategy of assured survival.

This posture must include both adequate active defenses of our forces and strategic counterforce weapons capable of limiting damage to our people. By adopting this posture we will still have deterrence and, more importantly, we will have a defense should deterrence fail.

Chapter 6 of the Strategy of Technology, Winning the Decisive War, follows:

Assured Survival

ASSURED DESTRUCTION

Former Secretary of Defense McNamara based the strategic survival of the United States on a policy of Assured Destruction. This was defined as the capability to assure the destruction of some specified fraction of the population and industry of the potential enemy after the U.S. Strategic Offensive Forces (SOF) had absorbed the best possible attack the enemy and his allies could launch.

To this end, the U.S. SOF was designed to be survivable, although little was done to make it flexible. Polaris missiles and nuclear submarines were built. A force of 1,000 Minuteman missiles was deployed, although a larger force was deemed necessary by the Air Force. The Minuteman silos were hardened as best they could be, which did not make them invulnerable, and the Minuteman command structure was given redundancy. The bomber force, thought to be vulnerable to the enemy first strike, was allowed to become obsolete and decline in numbers. The bombers were not replaced by newer types, although statements were made to the press about an altogether imaginary strategic bomber version of the TFX. Now, in 1970, Congress has approved research and development of a long-range supersonic bomber, the B–1, but it will not appear in inventory for years; McNamara had intended, consistent with his strategic doctrine, that the strategic bomber would vanish forever.

Missiles that were slow to react and were believed not to be survivable were eliminated from the inventory. Overseas-based missiles were withdrawn, chiefly because of explicit or implicit executive agreements made during the Cuban incident of 1962. The capability of the U.S. high command to fight a nuclear war was regarded as far less important than the capability to achieve assured destruction of the aggressor.

McNamara began his reign by denouncing the "spasm war," the sole purpose of which was destruction of the enemy society, and said he was replacing the spasm war plan with a policy of flexible response; however, by the time he left office the entire strategic offensive force was geared to Assured Destruction and therefore to a spasm reaction. By forsaking flexible systems such as manned bombers, mobile ballistic missiles, onboard guidance systems for ease of retargeting, and the large-yield Titan which could have been installed in the abandoned silos of the obsolete Atlas missiles for use against very hard targets,[1] the United States had technologically locked itself into a situation in which the only flexibility of the response would be "how much of the enemy are we still able to launch against." Much of even this limited flexibility was illusory. The enemy's reserves and refire capabilities made our surviving missile force vulnerable to renewed attack unless it was launched quickly after the initial strike. Because of our lack of adequate air defenses, the enemy could destroy our unlaunched missile force with manned aircraft (even aircraft as inappropriate as refueled medium-range bombers). Without counterforce capabilities to destroy the Soviet strike forces, the United States had no choice but the spasm reaction to any enemy attempt to eliminate our strategic systems. We could not seek to reduce or destroy his ability to make war on us, because we had chosen not to construct forces capable of flexible operations. We had, almost completely, predetermined our strategy for years to come.

Thus, the United States had no alternative but Assured Destruction. If deterrence failed, the thermonuclear holocaust would be upon the earth with certainty, because we could fight no other kind of war. With our land-based systems dependent upon early launch to assure that they could be launched at all; with no flexible retargeting capability for this force; with no reconnaissance capability to allow us to know which enemy sites were empty and which were being prepared for refire; and with the Polaris force having no capability for firing a full volley and having insufficient accuracy for anything other than a countervalue strike, flexible response took on a note of irony.

[1] A limited number (56) of Titan IIs, previously deployed, were retained; but the Atlas silos, which could have been modified to allow more Titan II deployment, were sold.

SOVIET STRATEGIC DOCTRINE

In contrast to the United States, it would appear that the U.S.S.R. adopted a policy of Assured Survival. That is, the Soviets installed substantial defenses and counterforce weapons to ensure that the United States would be unable to destroy more than a portion of the Soviet Union and its satellite countries. Whether they were successful in this policy is questionable, but the point is that they chose a reasonable strategy while our professed strategy led to deployment decisions that forced us into a posture that was the opposite of what we intended.

Presumably the Soviets were unable to reduce the fraction of destruction below a level which they regarded as low enough. On the other hand, since the United States had conceded the initiative of striking first, the Soviets did not need to be overly concerned about the U.S. policy of Assured Destruction; the level of destruction is essentially a function of the level of success in the first strike. The lack of active defense on the part of the United States augmented the chances that such success might be considerable and made it unnecessary to use any large part of the Soviet strategic budget for development of penetration systems. They could and did concentrate on large payload capacity, accuracy improvement, and sheer numbers of offensive weapons, hoping to exploit their numbers and large payloads more fully when multiple reentry vehicle technology was adequately developed. The rest of their budget could go to testing and development of strategic defense, to which they traditionally have allocated huge resources.

REQUIREMENTS OF ASSURED SURVIVAL

At this time (1970) the United States has not even begun to adopt a policy of Assured Survival. Our defensive Safeguard is intended to protect the SOF, not our people. Whatever doctrine we have is still based on a policy of Assured Destruction, although strategists can easily conceive of situations in which destruction might be not assured or might be visited largely on this country.

The United States is locked to a policy of *offensive à outrance*. Suppose, however, the Soviet attack could be carried to our strategic force only to reduce the amount of assured destruction that our damaged force, further reduced by Soviet defenses, would be able to accomplish. This could be a level at which we would question whether the surviving force would be sufficient to destroy the enemy's war-making capability. The Soviets could then, at least in theory, point out that the launch of our surviving force would be suicide for unprotected U.S. cities. They would, of course, have held back hardened forces sufficient to destroy many American cities, using their soft-based and space weapons in the initial strike. Our president would be faced with a most difficult moral choice. He could either launch the SOF against Soviet industry and population centers or surrender. Doubtless, the surrender terms would be made easy to accept—initially. Whether the terms would be kept is another question. It is highly likely that whatever the eventual fate of the United States, Europe would have no choice but unconditional surrender and incorporation into the Communist "peace zone."

Because the United States concedes the first strike to the Soviet Union, Assured Survival is a policy more expensive for us than for the enemy. We must have an Assured Destruction capability as a part of Assured Survival; but we must also have active defenses and forces capable of defeating the enemy in nuclear aerospace battle. The most pressing military problem of the free world is to provide active defense against the strategic striking power of any would-be aggressor. Active defense is also the most technically difficult of the current military problems. It becomes no easier with time, the

longer defense technology is held back, the more difficult the problem becomes because offensive power is growing. Yet strategic analysis indicates that a strategy of Assured Survival will be far more valuable to the free world than one of Assured Destruction.

There are two basic methods to provide Assured Survival. The first, construction of a force sufficient to destroy the enemy striking force in a preventive attack, is probably not feasible for an open society; if it were constructed it could not be launched by Western statesmen without severe provocation. Even a preemptive strike appears to be very difficult. The problem, it should be noted, is not symmetrical. A secretive society without scruples about aggression can achieve a decisive first strike capability far more readily than an open and peaceful government. In addition, the size and the distribution of population and industry of the United States and of the U.S.S.R. make the problem of achieving a full first-strike capability much simpler for the Soviet Union, as they are capable of absorbing many more nuclear weapons than we for any given level of population casualties. Finally, U.S. concession of the first strike to the other side allows the Soviets to employ large missiles launched from soft pads such as space exploration launchers as a part of their first strike. (At this time they are deploying the soft-liquid SS–9 in great numbers.) Thus to say the United States may be unable, given the present state of weapons technology and sociological factors, to achieve a full counterforce capability is not the same as saying that the Soviets cannot achieve it.

The second method of achieving Assured Survival is through active defense, coupled with sufficient counterforce capability to threaten the enemy's residual or holdback forces. Active defense also serves to prevent destruction of the United States by a third power, whether it be Red China or some other country that in the future acquires nuclear weapons. In fact, an adequate program of active defense will ensure that, whatever our capability against the U.S.S.R., the American people will not be hostage to anyone else. There are at present no other powers capable of overcoming the defenses we could construct with present technology, and by the time others achieved penetration capability the United States could easily update the system to accommodate new technology. There are other benefits to active defense, such as control of accidental or catalytic nuclear war, which we will discuss; but the primary value of defense is its contribution to a policy of Assured Survival.

THE CASE AGAINST ACTIVE DEFENSE

There are two primary arguments against active defense, each in turn divided into two schools. The two broad classes of arguments against defense are theoretical and technical-economic.

The basic theoretical argument against defenses is that they might work. By so doing, they reduce the casualties that would be incurred in a nuclear war, and thus make that war more "rational" or possible. If decision makers know their national survival is assured, or believe this to be the case, the argument goes, they will be more reckless in making nuclear threats, and sooner or later the war will begin. According to this theory, the American and Soviet populations are hostage to each other, and ought to be. Through this massive exchange of hostages, we ensure peace.

The second theoretical argument against defense, often made by the same people who support the first argument above, is that the system will not work. Instead, all the defense systems will do is force each nation to construct strategic offensive forces that can penetrate the enemy defenses. This, they say, will trigger another round in the arms race, resulting in great increases in SOF on both sides. The defenses will then be useless and vast sums of money, which should be put to work by other agencies of the government, will have been wasted. Most adherents of this view have a number of projects they believe the government should support with what might otherwise have gone toward a policy of Assured Survival.

The primary technical-economic arguments against defense are, first, that it cannot work, or that we simply cannot afford a system that will work. Complete defense is not possible at any price, and partial defense is prohibitively expensive. A second school contends that this argument is probably true, but that even if it were not, we would be better off using the money to construct new Strategic Offensive Forces, on the basis that the aggressor will be more easily deterred by the prospect of more complete destruction of his homeland than by the possibility that his attack will not be successful.

There are many variations on those themes, including some unlikely combinations of them, but they all reduce to one or more of the basic points.

DISCUSSION

The first and last of the above contentions reduce to the argument for deterrence as opposed to defense: Assured Destruction against Assured Survival. They are vulnerable to the same objection as is the deterrence thesis itself, namely, that an opponent with a rationality that differs from your own may not accept your logic; a stupid one may not understand your rationale; a very clever one may devise a method of neutralizing your force, either through a first strike, defense, or a combination of the two with psychological means; and a timid, frightened, or simply humanitarian president might prefer surrender to the deliberate killing of millions of nonbelligerent enemy nationals. The deterrence thesis of a balance of terror runs counter to Christian ethics and the doctrine of Just War, although, if there is nothing else to depend upon, preservation of the peace through Assured Destruction is in our judgment preferable to surrender or war, even on purely humanitarian grounds.

Furthermore, by abandoning defense on entirely theoretical grounds we fail to take advantage of inevitable breakthroughs in defense technology. It is becoming more and more conceivable, for example, that some form of ray or energy beam might be devised which could destroy all incoming warheads, whether delivered by aircraft, short-range submarine-launched missiles, spacecraft, or ICBM. This possibility, long considered remote, has become more than a theoretical possibility in the past 10 years.[2] But if we do not have the radars and computers to detect and track incoming enemy missiles, perfection of laser kill mechanisms will do us little good.

We cannot stress often enough that technology has a habit of being richer than even the most imaginative planners predict. Technological breakthroughs in missile defense are inevitable, and we must be in a position to take advantage of them. It is obvious that the unilateral achievement of good defense, or offense-defense combinations, by the U.S.S.R. would hardly have a stabilizing effect on international politics. We doubt that the free world would become safer through such an event. If we want to survive, we cannot concede the initiative in active defense to the enemy. Defense technology is at the moment in the lower left-hand quadrant of the technology S-curve. We see no reason why it should not continue to a breakthrough.

The second argument, although theoretical in form, is in fact technological and economic, and reduces to a special case of the third argument. If a defense could be achieved that could not be countered by the offense, the argument against such defense on technical grounds vanishes. If this defense were obtainable at any reasonable price, the nation would be faced with the alternatives of continuing to live with the balance of terror or making the necessary sacrifices to end it through Assured Survival.

In the real world, of course, it is unlikely that a leakproof defense will ever be found. This does not mean that no defense is preferable to a partial defense. In any rational view, survival of some of the nation is preferable to complete extermination. We hope that those who fear that nuclear war will result in the extinction of all life on the planet would be the first to agree. The question of whether partial or substantial defense can be obtained is, of course, technological, and cannot be answered here. It is sufficient to say that the best-informed scientists, fully aware of all available data including the most highly-classified material, believe that effective defense can be obtained at a price which, although high, is still within the capability of the nation. Scientists with more fractional knowledge are often negative. We are reminded of the hydrogen bomb controversy, in which one school of scientists was convinced that the weapon could never be built, and that even if it could be it could never be transported. Another group believed the opposite, and was proved to be correct. As it happened, they stood at the threshold of the sharply rising portion of the S-curve.

The arms race argument is perhaps one of the most spectacular; it is also the most overworked. According to this view, all that defense would accomplish would be to raise the levels of strategic offensive forces in the inventories of both the United States and U.S.S.R., encumber each with defense systems that could not cope with the new offensive weapons, and waste a great deal of money all around. In addition, it is usually said that these mutual increases in SOF levels are themselves dangerous because they make nuclear war more probable.

The latter statement is most certainly not correct. As the mutual inventories of SOF increase, the destructiveness of nuclear war also increases, so that it becomes less and less rational to initiate nuclear hostilities for any but the most compelling reasons. In addition, the defense system will presumably be able to cope with small, unsophisticated attacks such as might be launched by enemy generals against orders, insane local political leaders, or small nations hoping to trigger (or catalyze or provoke) a war between the superpowers. Thus, the chances of nuclear war, initiated for whatever reason, are reduced by this new round in the arms race, even if the race works as predicted.

More important, the prediction is almost certainly wrong. It is far more likely that as each side develops defense technology, the defense systems will become more, not less, useful. Offensive systems to cope with the new defenses will become more and more expensive, so that fewer of them can be built. The price of the Technological War will increase rapidly. The first result of this price increase will be to force all minor powers out of the strategic picture. They may continue to be threats to each other, but after the first round of offense-defense deployment, the minor powers will never again be a threat to the superpowers. The Nth country problem vanishes, and in the highly unlikely event that detente is ever achieved, this achievement will be meaningful. There

[2] See, for example, "Laser Weaponry Seen Advancing," *Aviation Week and Space Technology*, January 12, 1970. There is little likelihood that laser defense weapons will be operational for years, so Sprint and other ABM missiles will be required to achieve a defense capability in time to counter the growing Soviet SS–9 threat; however, such weapons are now a real possibility, not a science-fiction device as they were thought to be only a few years ago.

will be no pressures from allies to complicate the agreements made by the superpowers.

Still more important is the effect on the U.S.S.R. of a dramatic rise in the price of the Technological War. Soviet resources available for expansion and weapons are really quite limited compared to those of the United States. Even without U.S. mobilization, we are able to spend substantially more on the Cold War than our opponents—as indeed we must so long as the objectives of the United States and the U.S.S.R. are asymmetrical. Stabilizer powers always require larger forces than disturber powers because they have abandoned the initiative in military action; they must not also abandon the technological initiative, or else they no longer have the capability of stabilizing.

Soviet resources consumed in the Technological War of offensive against defensive strategic systems will not be available for other aspects of the Protracted Conflict. They would not be available, for example, to subsidize Soviet allies in the Middle East. They would not be available to subsidize Communists in Asia. Soviet naval strength would suffer. The threat to Europe would be eased. The consequence of a real escalation in the nuclear arms race, in which the weapons may be destined to sit unused, anyway,[3] is to deescalate the arms race in the sphere where armed conflicts are fought. If the costs of the strategic arms race of defense and offense are really not high enough to accomplish that result, then they have been exaggerated, and the argument against defense weapons fails. If they are that high, the result will be well worth the expenditure. The cost of the war in Vietnam has already exceeded the cost of a proper defensive system. The United States enjoys economic superiority over the U.S.S.R., and proper exploitation of this priceless advantage can result in real gains for the free world.

Finally, there is no good reason to suppose that, even though the United States fails to install defensive systems, the U.S.S.R. will not continue to increase the SOF. The evidence is to the contrary.[4] Soviet SOF deployment has been dependent on U.S.S.R. technology and resources, not U.S. armament levels. When the United States ceased to deploy ICBM systems for several years in the McNamara era, the Soviets redoubled their efforts to add to the SOF inventory and gain ascendancy. Since they continue to add to the SOF whether we install defenses or not, we would prefer that they be forced to divert some part of this budget to penetration aids and increased sophistication of their devices, rather than that they simply accumulate more and more missiles that could be used either to exterminate the last survivors or to launch highly sophisticated and effective attacks against our SOF. With very large numbers in inventory, a pin-down attack becomes far more than a theoretical possibility.

In our judgment, the arguments against strategic defense are basically those used against any attempt to win the Technological War. They stem from an incorrect view of Soviet motives, or an incorrect appreciation of the decisiveness of the technological theater of combat, or an incorrect understanding of the S-curve of technology. They stem from wishful thinking about the advantages of using the money that would be spent on the Technological War to eradicate poverty, or crime, or disease, or whatever other cause is favored at the time. We share the reluctance to spend money on unnecessary weapons. We have no desire to waste the resources of the American people on defense and weapons simply for their own sake. However, we recognize the grim reality of the times. The silent and decisive Technological War will be won or lost by weapons, not wishful thinking; and in time of war, especially in the early nuclear age, a nation must choose survival as the primary goal.

[3] They will be unused if and only if they succeed in averting the war.

[4] This observation was made in early 1969. Now, in 1970, it is obvious that the U.S.S.R. has accelerated construction of offensive weapons, including the nonsurvivable and supposedly provocative SS–9.

THE CASE FOR A NEW STRATEGY

The benefits of a strategy of Assured Survival are presented in outline form on Chart 15. Most of these have already been discussed elsewhere, and demonstrate how strategic analysis should influence technological decisions.

CHART 15

The benefits of assured survival

Ensure Survival of National Leadership.
Allow political control of the war.
Increase time for decision on retaliation.
Increase Effectiveness and Flexibility of U.S. Second Strike.
Increase Cost and Complexity of Enemy First-Strike Capability.
Increase Credibility of U.S. Guarantee to Allies.
Decrease Likelihood of Thermonuclear Holocaust.
Retaliation need not be launched on early warning.
Intercept and negate small attack.
Control accidental war.
Control catalytic war.
Advance defense technology to breakthrough; brings defense and offense to better balance.
Minimize Losses.
Civilian.
Natural resources.
Prevent Genocidal Strategies.

By protecting national leadership against nuclear attack, a defensive capability gives political leaders time to assess the nature and purpose of the enemy action and decide on appropriate responses. Without this assurance of survival of the highest authorities, the United States has no choice but to delegate launch authority to the surviving commanders or launch on mere warning of attack. Because survival of a general staff cannot be assured, the attack must follow a preplanned pattern, which means in effect that it must be directed against the enemy as a national entity. This is hardly in keeping with the Christian doctrine of Just War, yet, if decision makers cannot survive a first strike they have no choice but to preprogram the most deadly retaliation possible. We do not argue against such preprogramming, and in fact recommend it; but we would prefer to have the option of a careful post-attack assessment, and a rational response to enemy action. This can only be gained if an authority with the means of countermanding and modifying the preplanned strike can survive.

Active defenses will preserve more flexible means for carrying out retaliation. By protecting our strategic offensive forces, we will have more of them, and have more options. This surviving war-fighting capability may be sufficient to disarm the enemy, thus avoiding the necessity for mutual extermination.

Active defenses may prevent the first strike from coming at all. If a technological breakthrough allows the enemy a capability of destroying our undefended missile force, it does not follow that this new technology will also be sufficient to allow him to overcome those weapons if they are defended. There was considerable discussion of electromagnetic pulse (EMP) during the 1964 election. Without discussion of the technical merits of the arguments, it is obvious that if there were such an exotic kill mechanism that could disable our missiles in their silos, the carrier of the weapon with this mechanism still would have to be delivered on target. A defense capability would keep the carrier at a distance, require a much heavier attack, and disrupt the aggressor's attack pattern.

When the enemy must counter active as well as passive defenses such as hardening and dispersal, he must devote major resources to the effort. This diversion is beneficial, provided only that we have not wasted resources we might have used against him. But since the United States holds a defensive grand strategy and is a stabilizer rather than a disturber power, active defense is very much in keeping with our overall strategic posture; at the same time it requires the enemy to devote resources that might have been used to destroy us to the penetration or destruction of our defense network. At any given time, resources have a constant magnitude and are not expandable at will.

Another dramatic effect of Assured Survival is on our allies. The United States may be willing to commit national suicide to prevent the takeover of France or Germany, but it would be more comforting to allies to know that, if we had to launch a strike against the U.S.S.R., we did so with strong expectation of survival. It would make it a lot easier for allies to believe we would in fact launch the strike. More important, it would be easier for the Soviets to believe it.

Finally, by making possible a counterforce type of war, with interception of small or uncoordinated attacks against us before they destroyed much of the nation, Assured Survival through active defense would make less likely the thermonuclear holocaust that paralyzes so many of our intellectuals with fear. Accidental and catalytic war as well as war caused by third parties would no longer be total. National authority would be able to assess the effects of the enemy attack, which, if the defenses were effective at all, would have caused no great harm to our cities. It would be possible to determine whether a flight of missiles directed at us were the first wave of an attack, a pin-down maneuver intended to create a local environment through which we could not launch our missile force, or an unauthorized act. We could tailor our response accordingly.

In addition to active defense, we also require counterforce weapons. Assured Survival cannot be entrusted entirely to defense, because deterrence cannot be achieved except through offensive threats. So far as it goes, the idea is valid that the enemy will be deterred if we have an assured capability of inflicting enormous damage on his society. But if our strategic objective is to ensure that we do not suffer mass destruction, and will not have to kill millions of his noncombatants, we must be able to fight a war through to a successful conclusion. Pure defense is obviously no strategy at all; we need counterforce weapons as well.

The Soviets have grasped this essential point and unlike us have been deploying the SS–9, which carries a nuclear payload of up to 25 megatons as a single warhead, or can be equipped with multiple reentry vehicles to strike many targets with the same missile. Their SS–11 is a weapon like our Minuteman and is essentially designed for countercity operations. Thus their most probable attack would be a launch of the SS–9 force against our missiles, keeping the SS–11 in strategic reserve to use against our cities. We must have a capability of destroying that reserve force before it can be launched against us.

In summary, given acceptance of a strategy of Assured Survival, we must consider active defense and strategic counterforce weapons as the means for achieving that posture.

THE TECHNOLOGY OF ACTIVE DEFENSE

The following brief and admittedly incomplete discussion of the technology of active defense is presented to put the problem in focus and to illustrate the nature of technological warfare. Active defense is one of the most complex and difficult problems posed to the planners of the Technological War. For precisely this reason, it could be

one of the most decisive engagements in that silent and apparently peaceful war.

THE NATURE OF THE THREAT

We can define the defensive problem more concretely by examining the many kinds of weapons that could be used against the free world. The list of weapons is formidable.

The threat of air power is still posed against the free world. This includes tactical fighters and bombers; long-range subsonic bombers; and supersonic bombers. These aircraft carry a variety of nuclear and nonnuclear gravity munitions and guided air-to-ground missiles. The Soviet air force is a formidable threat, only minutes away from NATO countries and Alaska, but still hours away from the continental United States.

Surface-based missiles have considerable variations in range. The Soviets began their program with the development of short-range and medium-range land-based and submarine-based missiles. The total force could carry a considerable weight of attack against Europe and Asia. The submarines also pose a direct threat against the continental United States. Furthermore, the subs could launch their missiles from locations outside the detection sector of our Ballistic Missile Early Warning System. Warning times of attack from the sea against the United States could be in minutes.

The intercontinental ballistic missiles pose the most direct and formidable threat against the United States. They can reach any part of the country. They carry large nuclear warheads. Furthermore, the ICBMs in existence today are fairly accurate second-generation systems, with more capability to come. Global ranges have been achieved with FOBS (fractionally orbiting systems) and in due course will be augmented by fully orbital systems, including those with highly eccentric and very high orbits. The Soviet missiles carry large payloads, and can accommodate decoys, multiple warheads, maneuvering warheads, and target seekers.

The missiles have paved the way for threats from space. Bombs of great size can be put into orbit. Khrushchev claimed these could be 100-megaton area weapons. Numbers of them could be orbited simultaneously so that at least one would be over the United States or Western Europe at all times. Warning of attack would be measured in minutes. There is some speculation that offensive systems will not be limited to nuclear weapons. New laboratory devices could result in exotic weapons, such as energy beams, that could be used for operations in orbit. While such concepts are years away from reality, it is important to realize that the state of offensive power is dynamic and that defensive power can and must be even more dynamic.

Hence, the aggressor has extreme flexibility in tactics. He could use a mass launch of his many systems, varying the time of impact of his weapons. He could use varying times of launch and strive for near-simultaneous impact. He could attack in waves, depending on which targets he thinks he must eliminate to attain overall success. For example, he could attack warning, reconnaissance, and defense systems on the assumption that he would sacrifice giving warning in order to ensure penetration of defenses. He could use feints and threats on the assumption that he could wear down our alert force and thus facilitate his later strike; or he could try to maximize surprise in all its forms.

DEFENSE PROBLEMS

The extreme complexity of possible attacks greatly complicates the defense effort. It is therefore not surprising that many theorists have thrown up their hands in despair, and turned to a doctrine of *offensive à outrance* as the sole possible answer. They contend that against these highly sophisticated and complex attack mixtures the only tactic is one of deterrence through a threat of a counterattack directed, not at the enemy's weapons, but at his value systems. Many officers of the Strategic Air Command have held this view, claiming that technology limits the strategic choices to Assured Destruction. We do not agree.

The defense picture is easier to comprehend if we break it into parts and examine each of them. Additional analytical divisions are possible, but for our illustrative purposes we divide the problem into the following categories:

ICBMs and Space.
Sea-launched Systems.
Aircraft.

The first category, ICBMs and Space, is perhaps the most complex. Underseas warfare technology also is difficult, with few promising approaches, but for the submarine to deliver its weapons, either ballistic missiles or air-breathing cruise missiles, it must launch them through the aerospace. If these can be intercepted, the threat of the submarine is largely negated. Moreover, although the time of flight, and thus warning time, of the sub-launched missile is short compared to that of the ICBM, the payload is small, allowing the submarine-launched weapon fewer penetration aids.

We will examine the ICBM defense problem. We will not discuss undersea warfare and air defense, not because they are uninteresting but for the sake of brevity.

THE ABM PROBLEM

The Nature of the Attack. ICBM weapons go through three reasonably distinct phases on their way to target. They are the Boost Phase, Midcourse, and Re-entry. Each phase has certain characteristics.

Boost Phase. The boost phase lasts from the time of launch until the rocket engines are shut down (burnout). The phase is characterized by relatively slow flight, necessity for exact guidance, infra-red and perhaps other radiation, and high vulnerability. Given an interceptor vehicle with the proper homing equipment in the vicinity of the missile, boost phase interception is theoretically the simplest method of active defense.

Mid-course. The midcourse phase lasts from burnout to reentry of the warhead into the atmosphere. A purely ballistic missile during this phase is passive; it is cold, gives off no radiation, and most of the time moves at tremendous speed. It could reach a height of 700 miles or more. Some ICBM systems are designed to make use of midcourse correction, a maneuver in which the course of the missile is determined, its impact point predicted, and some kind of power applied to the vehicle to move the impact point closer to the target. If midcourse corrections are applied, the missile must radiate, and will be easier to detect and track.

Multiple independently targeted systems will also radiate during some part of midcourse flight, as the warheads are deployed from the booster.

Geography dictates that the midcourse phase for missiles directed at the United States from the U.S.S.R. must pass over large uninhabited areas such as the Arctic icecap, or Antarctica. This is a theoretically desirable location for interception, as damage caused either by the interceptor warhead or by premature detonation of the missile warhead will be negligible. At the same time, interception in this region of flight is more difficult, as decoys of small weight cannot be distinguished from the bomb-carrying reentry vehicle or vehicles.

Reentry. In the past few years the reentry phase, in which the incoming warhead must pass through some or all of the atmosphere before it reaches its target, has received a great deal of attention. By reentry time, the reentry vehicle (RV) has long since separated from its powered booster and is flying a more or less predictable path, although the shape of the RV, plus sophisticated techniques for moving its center of gravity, allow limited maneuvering capability for evasion or target-seeking.

The RV leaves a detectable ionized wake in the atmosphere. It is small but vulnerable, particularly in its initial stages where limited distortion of its shape or damage to its heat shield will destroy it completely. This phase takes place over the United States, and thus requires that the interceptor vehicle use a very clean warhead of limited yield to avoid damage to the population below.

INTERCEPTION POSSIBILITIES

Boost Phase and Pin-down. The most intriguing intercept possibility is some form of destruction during the boost phase of the enemy missile. This was once studied as Project BAMBI (Boost Anti-Missile Ballistic Interception), but the results (1959) were discouraging. Since that time, more promising approaches have been developed, but unfortunately they are more available to the enemy than to the United States.

The tactic that appears to have the largest prospect of success is a pin-down attack. In this attack, warheads fired from the defender's homeland or from space are detonated in the atmosphere over enemy missile bases. As the boost phase of an ICBM lasts several minutes, and the missile is quite vulnerable during that time because its guidance system is active and it is undergoing acceleration, any nuclear detonation nearby will render it useless if it takes place during the first few minutes of launching. The missile is no longer in its protected silo, and it is moving slowly through the atmosphere. Blast can push it off course; electromagnetic pulse can negate its guidance commands; hard radiation can destroy its guidance computer; or heat can even detonate its unburned fuel. A multimegaton warhead detonated within several miles of an ICBM in boost phase can destroy the missile.

To employ a pin-down tactic, then, it is necessary that a string of nuclear warheads be timed to arrive and explode at two to five minute intervals over each missile farm. This pin-down attack continues until other weapons arrive to destroy the missiles in their silos; none will rise through the pin-down detonations. Successful pin-down attacks require many warheads, but not an excessive number; for example, the entire Minuteman force of the United States might be pinned down with about 100 warheads per hour. Given multiple warheads, this could require as few as 20 enemy missiles per hour, surely not an impossible number.

The advantage of this technique goes mostly to the surprise attacker, who may begin his strike with a much smaller level of effort. He does not have to destroy the entire enemy missile force in his first attack wave; he merely pins them down until other weapons, for example manned bombers, arrive to finish the job. Only a few warheads are seen by the defender's early-warning system if pindown tactics are employed; by the time the victim realizes what has happened, it is too late to launch his missile force. If the original pin-down detonations come not from ICBM but from apparently peaceful satellites, there may be no warning at all before the force is trapped. Unless the defender has space weapons and manned bombers already in flight, he will not be able to employ pin-down tactics of his own because his force cannot get through. He has been denied access to space.

An alternate technique for boost-phase interception requires that space interceptors be constantly over the enemy territory. In order to keep a sufficient number of interceptors continuously ready for action and over the enemy territory, astronomical cost will be incurred. On the other hand, a smaller number of space-based interceptors employing pin-down tactics can be highly useful. Moreover, even a few boost-phase interceptors with large yield weapons in random orbits severely complicates the enemy's first-strike

planning. He must plan to make this launch when there is no interceptor over his country (assuming that he knows what is and what is not an interceptor). If he sends his attack out in waves, a single explosion in their midst can destroy a very large part of his force. The satellite-based, boost-phase interceptor can be useful to the attacker and it is also a possibly valuable component of the defensive arsenal. It can be coupled with manned, defended satellites that control the interceptors.[5] Manned space components can be useful in any phase of interception.

Midcourse. Theoretically, midcourse interceptors would best be based in the geographical area in which interception is to take place. That is, they should be based in the Arctic, probably on mobile platforms that could be either airborne or seaborne. Radars and other components of midcourse interception can be based in space or on land or at sea.

The midcourse interception problem is complicated by the fact that detection of the ICBM is hardest in this phase of flight. Its altitude is very great, and it is or can be cold and nonradiating. It may be accompanied by decoys, and it leaves no wake. However, the problem of intercepting large clouds of incoming warheads is not insuperable. Our ability to intercept this type of attack would complicate the attacker's war plan: not only must he invest in decoys at the expense of warheads but he cannot be certain how much of his attacking force will get through. The fact that midcourse interception *can* be made difficult or impossible does not mean that it *has* been made so. Whether this kind of intercept capability is a prudent investment for the free world is a technical question, depending on how many resources will be consumed in achieving the capability; but it should be noted that a relatively small capability will still greatly complicate the attacker's planning problems and decrease his confidence.

If we remember that the purpose of defense capability is Assured Survival, and that this is best achieved if the attack never comes off at all, the midcourse interception problem assumes more manageable dimensions. We are not greatly interested in a capability for midcourse interception of a few small warheads or decoys. These can be destroyed by area and point defenses based in the United States, near the potential targets. What is desired is a capability for complicating the attacker's battle plan, and for diminishing or destroying clouds of salvoed weapons launched at us. Thus, not only can antimissiles with relatively large but standard or improved warheads be employed but also the tactic of "threat-tube sterilization" is applicable.

This techique is based on the fact that an ICBM leaving a known location for a known destination can fly only one path, predictable in advance. It must travel through a "threat tube" in space. Properly designed weapons that vector their effects along a single direction rather than in a spherical burst can be used to destroy everything in the threat tube.[6] The presence of decoys becomes irrelevant. Such directional weapons are highly expensive (because they must be boosted into space), and would hardly be employed against single warheads, but as a system to be used against a heavy attack they show promise. Spoofing the interceptor system with decoys designed to look like a cloud of RVs is highly dangerous and uneconomical.

Midcourse interception becomes a matter of area defense in the latter portions of ICBM flight. A long-range, high-yield interceptor designed to defend against enemy RVs over a wide range and area can be used in midcourse interception as well as in the terminal phase or end-game. It can also be used to deliver threat-tube sterilization devices. Thus, although the best theoretical midcourse interceptors should be based in the geographical area of intercept (to cut down time of flight before intercept, allow larger payloads, etc.), it is not absolutely necessary that they be based there. Area defenses in Alaska and Greenland would, of course, be useful for both missions.

If it is technically feasible, a sea-based area defense system for midcourse or terminal interception could be valuable. Problems of location, guidance, and payload complicate the matter, but the mobility of a sea-based system would allow it to be used in defense of allies. A capability for forward deployment to provide allies with not only deterrent protection but active defense would be of immense value. Sea-based systems could also be used for area defense, employing high-altitude reentry interception. Because the system remains on an American warship, political problems of control and access that complicate land-based active defense are rendered irrelevant. Sea-based ABM systems are receiving new attention in 1970.

Space-based defense systems, which might make use of vectored effect weapons or, in years to come, energy beams, including laser weapons, could also be useful in defense of allies. Technical problems of space-based systems, as well as of systems self-defense, indicate that these systems will not be feasible in the immediate future; but space exploration should be designed with this possibility in mind.

Reentry. Interception of the incoming RV after it has entered the atmosphere is the most-discussed type of ABM system, and has been adequately summarized in many publications. We confine the discussion below to a few observations.

End-game or atmospheric interception can be roughly divided into two types: area and point. Area defenses employ relatively long-range interceptors which can be used over a broad geographical area. Because of their time of flight, they must make interception at relatively high altitudes, but for the same reason they can employ larger warheads than point defenses.

Point defenses, in contrast, can defend only specific targets. The point-defense concept, however, has two advantages. It may make use of somewhat smaller interceptors (although the tremendous accelerations required because of their short time of flight make their design and construction very complex); and, because interception takes place at lower altitudes, low-weight decoys have been stripped away from the warhead by the atmosphere and target identification is more or less assured. It is not worthwhile for the enemy to employ high-weight decoys, because the cost of their delivery is sufficiently high that it would be preferable simply to add another warhead.

Discussion. This general and nontechnical description of some of the problems of active ICBM defense is intended to serve as a background for the recommendation we make below. Our purpose is to show strategic considerations, and how they affect technological decisions and the management of the Technological War.

The offense-defense duel is summarized on Chart 16.

CHART 16.—INTERCEPTION CONCEPT

Technical problem	Pin-down	Boost phase	Midcourse	Reentry
Detection		Simple	Very difficult	Feasible.
Acquisition		do	Difficult	Do.
Tracking		do	Very difficult	Feasible; fast action required.
Decoy discrimination.		Problem nonexistent.	Very difficult to impossible.	Feasible to simple.
Interceptor launch	Routine ICBM.	Highly difficult; interceptor must be in target area.	Routine	Very fast response required; feasible but difficult.

Technical problem	Pin-down	Boost phase	Midcourse	Reentry
Timing and guidance.	Routine	Routine; present state of art.	Feasible	Feasible but difficult.
Vulnerability of target.	Highly vulnerable.	Highly vulnerable.	Less vulnerable; large yield weapon employable; directed-effect for sterilization employable.	Atmosphere attenuates weapon effect.

PASSIVE DEFENSE

All active defense programs must be coupled with passive defense or shelters. The usual objections to shelters are expense and their so-called provocative nature. Although limitations of space prevent detailed analysis of these arguments, we will briefly discuss each.

To deal with the second objection first, shelters are no more provocative than any other defense measures, and less so than offensive weapons. Providing a capability for protecting the civilian population can provoke only those who intend to kill American citizens. We have not found the well-known Soviet civil defense programs provocative.

With regard to cost, no one imagines that even partial shelters will be cheap; yet, with minor modifications or new construction, many shelter spaces can be created at very low cost. Urban renewal and highway construction offer excellent opportunities. Bridge abutments, overpasses, etc., provide heavy concrete and earth-filled structures that could be made with hollow spaces to provide shelter. Basements of new office buildings supported by public money can also be used. Shelters are costly if they are constructed as shelters but if they are included in new construction the additional costs are small.

Assured Survival will not require a massive expenditure for shelters. It will require intelligent analysis of existing structures and future construction to provide passive defense to protect the population. Combined with active defense, intelligent shelter identification and construction can greatly reduce the possibility of "assured destruction" of the United States.

LASER WEAPON SYSTEMS

There are many indications that laser technology is on the threshold of a major breakthrough. The laser offers such outstanding potential advantages for missile defenses that it cannot be ignored; it may be the defensive answer to the preponderance of offensive power generated by the ICBM. Lasers already seem to be the proper defense of ships against missiles such as the Soviet-constructed Styx with which the Egyptians sank the Israeli destroyer *Elat*. Some strate-

[5] Such satellites are, of course, vulnerable. However, their destruction would provide unambiguous warning of immanent attack.

[6] One approach to a vectored-effects weapon is to employ debris, steel slugs, or other physical objects—a sort of atomic grapeshot. Another is to focus radiant energy.

gists even foresee the end of the ICBM as a modern weapon. They say the laser has sufficient potential to eliminate the ICBM threat and usher in a new era when defense has the preponderant advantage, rather than offense. This may be far-fetched, but it is something to think about.

The laser is a kind of energy beam; it projects a tightly-focused beam of high-energy coherent photons with power sufficient to melt holes in aircraft and reentry vehicles. The range at which it can do this is at present rather short; but this is a function of the focusing of the beam, and research now indicates that it may be possible to extend this range to enormous distances. Specialized short-range Army lasers have already punched fist-sized holes in armor plate at ranges of several hundred yards.

The primary advantage of the laser for missile defense is that it acts almost instantaneously; the killing power travels at the speed of light, 186,000 miles per second, and consequently the capability to locate an incoming RV is sufficient to aim the weapon; the enemy vehicle need not be tracked for long distances. As the laser is a multi-shot weapon, decoy discrimination becomes less important; there is time to shoot down many incoming objects. Unlike an atomic ABM warhead, the laser kill mechanism does not contaminate the detection environment; the laser leaves no ionized cloud behind to blind its own radars.

Thus, laser systems offer enormous potential. Tracking enemy reentry vehicles is simplified; multiple installations become possible; there is little chance of running out of ammunition, as is possible when defenders must use interceptor vehicles. Shipboard installations become a distinct possibility, thus giving mobility to the defense and making a surprise attack on defensive installations much more difficult.

The present state of laser technology is, of course, highly classified. However, it is obvious that many of the early technological difficulties such as low efficiency and impossible power requirements have been overcome. We can expect continued advances in this field, and the Department of Defense is investing in laser technology. A Congressional appropriation committee member has questioned the value of research into "something that is away in the distance, 5 or 6 or 10 years," demonstrating again the problem of a nation without a strategy for the Technological War; but despite this there is great enthusiasm for laser technology in the military services. If the Congressman's estimate is correct, we could have an entirely new concept in weapons within a decade.[7]

Planning for Assured Survival, therefore, should include provision for making use of the laser, and for compatibility of laser guns with future defense installations. Laser weapons will still require heavy investment in radar and other ICBM detection and location equipment.

WHAT KIND OF DEFENSE?

At present, the U.S. strategic force structure is essentially responsive to the Soviets. Our penetration aids are designed to counter what we believe their defensive forces to be, and have required hasty redesign each time Soviet performance improved. Fractional Orbital Bombardment or Fully Orbital Bombardment Systems (FOBS) have required another hurried examination of our strategic defense concepts. Every U.S.S.R. deployment causes a fundamental reevaluation of our force structure.

It would be preferable to seize the initiative in the Technological War by designing and deploying dual-purpose systems capable of both offense and defense. This is technically feasible, and can save a surprising amount of money as well as force the enemy to spend resources providing for contingencies.

A dual-purpose system deploys missiles, aerospace ground equipment, basing, and logistics, all of which can be used to support both area defenses and strategic offensive weapons. Of course, the same missile cannot be used simultaneously for defensive and offensive missions. It is necessary to choose which mission the particular missile will perform, and before the mission can be changed modification would be required. However, the silo in which it is based, the maintenance crew that services it, the aerospace ground equipment that launches it, possibly the crew that controls it, and the logistics net that supports it are largely identical for both missions. It is quite probable that the same flight article can be used for both missions, with some modification of the warhead or warheads, arming and fusing, and probably the nose-cone reentry vehicle. It is likely that different guidance systems as well will be required for the two missions, but there is no theoretical reason why a general-purpose guidance system could not be developed if it is required. Microminiaturization makes on-board guidance computers feasible.

In addition to missile bases, the dual-purpose system would require radars to acquire and track incoming enemy warheads. These, however, may be used also to control other defensive systems, such as point defenses near cities, missile bases, and the radars themselves. Radars and computers are highly-expensive elements of a strategic defensive system, but the savings achieved by dual-purpose forces would be substantial. These components would be compatible with use of lasers for actual kill of incoming ICBMs, if laser technology develops as expected.

The advantages are more far-reaching when we consider the effect of these systems on the enemy. He cannot know which missiles in a given complex are defensive and which are offensive. He must prepare to penetrate defenses; yet, if he achieves sufficient capability, probably at great cost, there may be no defenses at all, all the birds having been converted to offensive purposes. On the other hand, if he develops defensive systems of his own, we would be capable of restructuring our force to achieve an optimal balance between defense and offense, while if he abandons defensive systems we could divert a larger part of the general-purpose forces to defensive missions without compromising our Assured Destruction capability. Dual-purpose forces allow us to engage in technological pursuit at low cost compared to enemy expenses, and to take the initiative in the Technological War.

Given dual-purpose forces, we can select the type of defense system that offers the greatest prospect for technological success and also creates the largest problems for the enemy. Proper strategic analysis must consider not only technology and feasibility but also the entire strategic picture. To some extent, technology can be created on demand. More important, less technical effectiveness may be preferable if the system achieves greater strategic effectiveness. In our judgment, this is the case with active defense systems.

Of the active defense concepts, the one most compatible with the dual-purpose force is the area defense system that intercepts the enemy either in midcourse or at high reentry altitudes. The same defense system can be used for both types of interception. Radars used for tracking and guidance of midcourse interception are also useful for tracking enemy RVs during their midcourse flight, even though they will not be intercepted until reentry or later. The midcourse interception concept is admittedly one that poses severe technical problems, and it may well take years before an operational capability can be achieved. The high-altitude reentry intercept, on the other hand, is as feasible today as is point defense at lower altitudes. By deployment of area defense systems we preserve an option for midcourse interception, threat-tube sterilization, or laser interception at a later time. The enemy, however, must take this into account, and divert resources to counter this threat even though neither the enemy nor we know what the future capability will be. If it turns out that offensive technology for penetration of midcourse defenses is more easily developed than defensive technology, we have forced the enemy to prepare for a problem he will never have to meet, since we are not forced to deploy or use the midcourse system. On the other hand, if we do choose to develop the midcourse interception system, we will have a powerful head start and will realize considerable savings.

It is easy enough to plan a dual-purpose force capability before the technology for defensive systems is fully developed. Actually, we can achieve still more force flexibility, by designing our basing concepts to be capable of launching any one of several possible flight articles, such as: several small ICBMs; one large ICBM; one large area defense missile; several small point-defense missiles; or one large area-defense missile capable of midcourse interception. The enemy cannot know which of these is in each silo, and, for that matter, we can change the configuration at will. He must prepare for all possible contingencies. We will have seized the technological initiative. When he responds, we can adjust our force to his maximum disadvantage, thus engaging in technological pursuit.

All of these can be real options as opposed to the paper options of the past, in that at least two of the possible birds for the system can be built with present (1970) technology. Thus, even if the research programs for the other possible configurations fail, we have added materially to the force while requiring the enemy to respond to several possible contingencies; if all of them pay off as expected, we will have achieved a real capability for deploying them at satisfactory savings in cost.

Instead, we have in the past preserved paper options. Technology was not carried past the research and development stage and thus made no useful additions to the force. Real options through multipurpose installations can create the military base for a strategy of Assured Survival. The analysis given above is not intended to be definitive or final. It is illustrative of applying the elements of strategic analysis to a contemporary strategic decision. Note also that the options we argue for are intended to prepare the base for deployment of a new generation of systems, such as the laser, that are not expected for some years.

Assured Destruction as a strategy is insufficiently flexible. To stay ahead in the decisive Technological War, the United States must strive for a real option of Assured Survival.

[7] "Laser Weaponry Seen Advancing," *Aviation Week and Space Technology*, January 12, 1970, p. 16.

BENEFITS OF SPACE TECHONOLGY ARE GREAT

HON. BARRY M. GOLDWATER, JR.

OF CALIFORNIA

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. GOLDWATER. Mr. Speaker, the American people seldom hear of the tremendous benefits of aerospace technology as applied to the problems of daily life. To those who reap these benefits, the change in their lives is often dramatic. I am indebted to Mr. J. Griffith-Jones of Temple City, Calif., for bringing to my attention one small but

important way in which aerospace research has pushed forward medical frontiers.

Mr. Griffith-Jones, like thousands of other Americans, was completely crippled with rheumatic arthritis, a disease which had destroyed his hip joints. Now he walking normally, with the aid of two artificial hip joints installed during a major operation at Hollywood Presbyterian Hospital.

Until recently, surgeons in this country were reluctant to perform this surgery because of an unacceptably high infection rate. However, thanks to techniques developed for the space program by NASA, the operation is safely performed under supersterile conditions which are seldom, if ever, achieved in ordinary operating rooms.

The operation is performed in a special 20- by 20-foot plexiglass operating enclosure, set up within a standard surgical operating room. Inside the enclosure air is cleansed by a laminar air flow technique developed by NASA. The same El Monte, Calif., firm, Moore and Hanks, which makes the environmental controls for "clean rooms" used for missile parts assembly, developed the new "supersterile surgery." Surgeons wear special bacteria-proof suits which are adaptations of the suits developed by Garrett Air Research to monitor the metabolic rates of astronauts working on the moon.

Mr. Speaker, perhaps the best statement of the importance of these developments has been made by Mr. Griffith-Jones himself:

> Were it not for the Space Age technology, I and literally thousands of other people would be hopelessly and helplessly confined to a wheelchair, stripped of all dignity. This perhaps explains why I am so enthusiastic about your efforts in furthering Space Age technology, as I know if this hip breakthrough can be accomplished, then similar medical feats can be accomplished in other areas.

CONGRESSMAN ANNUNZIO SUPPORTS PROPOSAL TO EXEMPT A PORTION OF RETIREMENT INCOME FROM FEDERAL INCOME TAX

HON. FRANK ANNUNZIO

OF ILLINOIS

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. ANNUNZIO. Mr. Speaker, today I am introducing a bill which will provide equitable tax treatment for elderly Americans whose retirement income is derived from sources other than social security.

Under present law, benefits paid under the Social Security Act are fully exempt from Federal income tax. The retirement income of individuals retired under other pension plans, public or private, is fully taxed once the employees' contributions are recovered. My proposal will provide equal treatment for individuals retired under other publicly administered systems and those 65 years of age and over who are retired under private pension plans by excluding from gross income an amount not exceeding the maximum social security benefit payable in the taxable year involved.

With the 10-percent increase in benefits effective January 1, 1971, maximum annual social security benefits now total $2,557 for a single person and $3,835 for a married couple. In addition, legislation has passed the House which would increase social security benefits by an additional 5 percent in June 1972 and provide for future automatic increases tied to the cost of living.

A comparison of social security with the Federal civil service retirement system points up the inequity of present tax treatment. Under social security, the present employee tax or contribution is 5.2 percent of annual earnings with a maximum taxable wage base of $7,800. Federal civil service employees, on the other hand, must contribute 7 percent of their total base salary, regardless of amount.

The unjust discrimination against retired Federal employees in our tax laws should be corrected. Federal civil service employees are not eligible for benefits under the Social Security Act. Federal employees pay full income taxes on their salaries at the same time they are making larger contributions toward their retirement than their counterparts under social security. There is no sound reason why social security beneficiaries should be singled out to receive this special tax treatment.

Present tax law ostensibly provides relief for employees retired under plans not covered by social security. The retirement income credit, which was enacted in 1954, was designed to extend to all retired persons benefits somewhat comparable to the exemption enjoyed by persons receiving tax-free social security payments. However, the maximum amount for completing the credit has not been updated since 1962. In addition, the retirement income credit requires an entirely separate income tax schedule with a labyrinth of complicated computations to be filed with the income tax return. This complexity has resulted in an estimated one-third of eligible elderly taxpayers foregoing the benefits since they find themselves incapable of computing the credit themselves and cannot afford to seek professional assistance.

Since the maximum income subject to the retirement income credit has not been revised for 9 years, obviously the credit no longer provides equivalent relief to those receiving social security benefits. My proposal, by being based on maximum social security benefits, provides for an automatic adjustment in the amount of retirement income to be exempt from taxation whenever an increase in these benefits is enacted. This feature is absolutely essential if equity is to be maintained.

We have an obligation to help older people living on fixed incomes. Tax inequity should not be tolerated for any age group, but it is much worse for those who have worked for a lifetime only to find that the security they had sought through retirement savings is diminished by inequitable taxation. I urge my colleagues to enact this legislation.

NATIONAL DEFENSE

HON. BILL ALEXANDER

OF ARKANSAS

IN THE HOUSE OF REPRESENTATIVES

Wednesday, August 4, 1971

Mr. ALEXANDER. Mr. Speaker, I want to congratulate my colleague from South Carolina on his initiative in leading this dicussion today of the disturbing position in which we find our national defense system.

I share the alarm which has been expressed here over the U.S. declining ability—not to launch a military offensive in protection of its interests, but its ability to defend our people and our interests against attack. My colleagues who have already addressed you today have provided excellent documentation of the reasons for the alarm which we express. Therefore, I have no intention of repeating that material.

There are a number of points upon which I would like to touch, points which are inevitably raised in any serious discussion of national defense. These points, I feel, merit frequent and repeated emphasis until we, as Members of Congress, and our people, as a nation, manage to forget rhetoric and to put the needs of the country in proper perspective.

I, like a growing number of Members of this deliberative body, am concerned with the urgent need for realining the objectives of our efforts on behalf of the Nation. I, too, am convinced that increased emphasis, effort and funding must be channeled into the work of finding and carrying to completion solutions to the social ills and economic crises which torment our national life.

And, I have long been convinced that our foreign policy, particularly the character of military and economic aid, must be revamped.

Yes, I believe there should be changes made in the spending and research and development programs for our defense system. Working with our defense experts, military and civilian, we in the Congress and the administration must seek hardnosed remedies to the inefficiencies which seem to have become the nemesis of efforts to get full value from our defense dollars.

But, at this point, I am convinced that we are seriously in danger of crippling this Nation's ability to defend itself from attack. I fear that the current popularity of defense budget cuts is perhaps blinding some national leaders and opinion makers to the peril of this Nation's inability to present a sane, do-not-tread-on-me defense posture.

We, as a nation of free men and women, are irrevocably opposed to oppression and warfare. We hold our liberties as inviolate. And, the majority of us have in decades past believed that men essentially want to be free to choose and operate their own forms of government. We, as a nation, operate under the assumption that most of the men and women in other nations are honorable and just.

Yet, we have repeatedly seen the strong nation, led by ambitious men and women, engulf the weak nation by overt force and covert subversion. We know this tendency is real. We have repeatedly been forced to fight wars and "police actions" because of the greed of the few who have gained domination over their fellow countrymen.

We know all these things, but we seem to be becoming increasingly oblivious to the fact that as we strip our own defense system of its capacity for national defense, we negligently open our shores and interests to foreign domination.

Instead of taking positive actions to improve the morale, the technological capabilities and the administrative capacity of our defense system to do its job, we snipe at its operation. We fall into the trap of an antimilitary stance. This is an attitude promoted by elements which have an interest in polarizing the people of the Nation and the men and women charged with the job of protecting our freedoms.

The people who founded this Nation did the job through dramatic action. Their descendants who explored it dared much to accomplish the task of spreading modern civilization across the land. And, we have achieved our technological accomplishments in a stunningly short timespan.

Moderation has rarely been the basic element in our Nation's movement through history. We Americans tend unfortunately to believe that if a small dose of a solution will bring improvements, a large measure will bring instant utopia. We find it difficult to remember that our problems took many decades to create and will take many years to completely alleviate.

We long for the drama and satisfaction of racing to a goal as soon as a solution has been settled upon. We are impatient in the face of national needs. We do not like moving with deliberate speed. So, we cut and trim, or slash and attack, programs which have lost their immediate glamour and urgency and have settled down to the day-to-day task of keeping the Nation free.

I fear we have grown bored with the indispensable task of providing and maintaining a sufficiently strong defense system. There is an undeniable threat to our national security which is being directed by groups with interests alien to our doctrine of freedom. This threat, real as it is, though, lacks the drama which stimulates big, bold headlines in newspapers and magazines or television and radio news specials. So, we grow weary with the never-ending, grinding, demanding task of keeping the Nation secure from outside domination.

I would urge you, my colleagues and the people of our Nation to have the patience required to maintain a defense posture which will keep us free. Or, to resign yourselves to losing the freedom of self-government and self-determination.

Thank you, Mr. Speaker.

SOVIET MILITARY RESEARCH AND DEVELOPMENT—PART X

HON. MICHAEL HARRINGTON

OF MASSACHUSETTS

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. HARRINGTON. Mr. Speaker, in May 1971 the Center for International Studies at the Massachusetts Institute of Technology released an excellent study by Dr. Robert Mikulak, "A Second Look at U.S. and Soviet Research and Development." Dr. Mikulak, who has been assistant professor of chemistry and political science at Hamline University in St. Paul, Minn., has since August 1971 been employed by the Science and Technology Bureau of the Arms Control and Disarmament Agency.

Dr. Mikulak is particularly critical of the statistics regarding comparative technical manpower used by Dr. John Foster, Director of Defense Research and Engineering, to back up the Defense Department's assertion that the United States is losing its leadership in military technology to the U.S.S.R. Dr. Mikulak concludes:

Foster's estimates substantially understate American production of scientists and engineers and significantly overstate Soviet graduation figures. . . .

Current overall manpower trends favor the United States rather than the Soviet Union. If current trends continue, the Soviet Union will fall behind the United States in trained manpower. . . .

Predictions made by DOD about the number of scientists and engineers who will be employed in R&D in the U.S. and U.S.S.R. in 1985 are nonsense. The DOD figures are useful only to scare Congressmen into increasing appropriations for military R&D.

Perhaps in response to the criticisms of the scientific and engineering manpower figures used in DOD's analyses, Dr. Foster has recently played down the significance that DOD attributes to comparative manpower data in building its case for the military R. & D. gap. For example, Dr. Foster has stated:

This yardstick is at present the least accurate, because the data are in raw, unstructured form and as a consequence have been used to support, not determine, our conclusions. . . .

Our discussion of the production of scientists and engineers in the U.S. and the Soviet Union was not intended to establish any absolute level of such employment.

Such statements are apparently intended to minimize DOD's responsibility for or need to defend any particular set of figures.

It is interesting to note, however, that in his testimony before the House Defense Appropriations Subcommittee on June 1, 1971, Dr. Foster featured a discussion of comparative Soviet and U.S. technical manpower, emphasizing that subject before any other in presenting DOD's request for an increase in appropriations for research and development.

Dr. Robert Mikulak in April 1971 also prepared for me a memorandum that discusses DOD estimates of Soviet manpower engaged in R. & D. as presented in Dr. Foster's statement to Congress this year. I request that that memorandum and Dr. Mikulak's MIT study be printed at this point in the RECORD. Unfortunately, it has not been possible to print several charts and figures that accompany these two papers:

A SECOND LOOK AT U.S. AND SOVIET RESEARCH AND DEVELOPMENT

(By Robert Mikulak)

Since the early 1950's government funding in the U.S. for research and development has been half of a closely coupled, mutually reinforcing, almost symbiotic system. Its partner, the Soviet effort in science and technology, supplied what American R & D could not provide for itself—a convincing rationale for rapid, continued expansion. U.S. spending for R & D has been propelled rapidly upward by the successive crises of Soviet-American competition: The Korean War, the "bomber gap," the "space race," and the "missile gap." Since the mid-50's, R & D connected with what is called "the external challenge," that is, the R & D expenditures of the Department of Defense, NASA, plus half the AEC R & D outlay, has represented 75–90% of the entire federal R & D budget. For 20 years the American people have been warned that the Russians are right behind us, ready to subjugate us if we ever falter in our research efforts. No doubt the same argument in reverse has been a powerful prod to Soviet R & D.[1] Each side has tried to outdo the other in devising new weapons and better defenses, and in winning international prestige, through science and technology.

After two decades the cry of "Wolf! Wolf!" no longer brings the automatic response from the American public or the Congress that it once did. Often what looked from a distance to be a pack of hungry Soviet wolves has turned out on closer inspection to look more like a group of American generals, politicians, and defense contractors dressed up in Russian bearskin coats. Other problems, the war in Southeast Asia and domestic social and economic issues, have moved to the forefront of our national consciousness. Federal R & D funding first levelled off and is now dropping.

In the spring of 1970, at a time when the defense research and development authorization bill for the 1971 fisal year was being voted on in the House of Representatives, the Defense Department unveiled a program to "make more Defense information available to the American people. . . ." As part of this effort, Dr. John S. Foster, Director of Defense Research and Engineering, discussed Soviet military research and development activity in a speech before the American Newspaper Publishers Association.[2] Once again Dr. Foster sounded the warning: ". . . the Soviet Union is now about to seize world technological leadership from the United States." He went on to support his statement by comparisons of trends in research and development activity in the U.S. and the Soviet Union. To clinch the argument, Dr. Foster quoted an address made in April 1970 by Soviet Party Chairman, Leonid Brezhnev:

Listen to Soviet Communist Party Leader Brezhnev last week. In a speech on national goals and priorities he stated: 'The Central Committee has constantly stressed in this connection the importance, above all, of accelerating scientific and technical progress.

Footnotes at end of article.

The fundamental questions of the scientific and technical revolution and the rapid development of science and technology will continue to be given priority by the party and the government.[2]

Is the wolf really at our door this time? Although such warnings have often been mistaken in the past, Foster's assertion deserves to be taken seriously. Military power in the world today, after all, is largely based on technological capability.

First, we will examine the evidence presented by Dr. Foster to see if it is reliable. Secondly, the future of American military research and development will be discussed.

One would suppose from Dr. Foster's remarks that Brezhnev's speech dealt with increasing Russia's military might, which in turn would pose an increasing threat to America's security. In fact, as the Washington Post pointed out,[3] Brezhnev was emphasizing the need to devote more effort to peaceful economic development in the Soviet Union—to speed economic growth by raising productivity. The speech was delivered while presenting the Kharkov tractor works with an award for superior production.

The Post discovered that the quotation cited by Dr. Foster had been doctored—pieced together from two separate portions of Brezhnev's address. In order to make the tone of the speech clear, it is worth quoting at length from the Current Digest of the Soviet Press translation of Brezhnev's remarks, as they were reported by Pravda, the newspaper of the Soviet Communist Party's Central Committee.[4] The two phrases which went to make up Foster's citation are italicized:

How should we strive for the solution of the problems that have been placed on the agenda by the whole course of our development?

In this connection, *the Party Central Committee constantly emphasizes above all the importance of the acceleration of scientific and technical progress* and the broad and timely introduction of its achievements in production.

Enormous, still unused possibilities are inherent here. To bring about the acceleration of scientific and technical progress means to introduce new technology in production more quickly, to replace old equipment with new equipment, to ensure a rise in labor productivity, a reduction in the unit cost of output and an improvement in output quality in other words, to accelerate the whole process of communist construction and a rise in the people's living standard.

The advanced achievements of science and technology must be made the property of each branch of the national economy, of each enterprise, as quickly as possible. I should like to note in passing, Comrade L. I. Brezhnev continued, that the tractor builders and all the personnel in farm machine buildings are responsible not only for scientific and technical progress in agriculture, for its full changeover to industrial methods and forms of production.

The creation and introduction of new equipment is a matter not only for scientists, designers and engineers but also for millions of rank-and-file toilers. The searching thought, knowledge, experience, energy and creative initiative of the workers' guard-front-line workers and production innovators is a mighty accelerator of our forward movement. The director and every worker, the Party committee secretary and every Communist should be concerned about scientific and technical progress at the enterprise.

"The fundamental questions of the scientific and technological revolution and the accelerated development of science and technology will remain at the center of attention of the Party and government. This is a highly important task of our economic strategy, not only for the current year but also for the entire foreseeable period of the country's development."

For the most part the statistics cited by Dr. Foster in his speech were drawn from a more detailed, less dramatic comparison of Soviet and U.S. research and development presented to a House subcommittee in March 1970 during hearings on the military procurement authorization bill for fiscal year 1971.[5] Before taking a look at the figures used by Dr. Foster, the difficulty in estimating Soviet national security expenditures must be emphasized. Without access to classified intelligence information, the task is especially difficult. But it is not impossible to make an informed judgment about what Dr. Foster and others in the Defense Department have said about the level of Soviet research and development activity.

The Soviet budget lists, without details or substantive discussion, an item labeled "defense." Most Western experts believe that the "defense" item, however, represents only a fraction of the actual national security expenditure.[6-7-8-9-10] The consensus is that the scope of the "defense" item does not include such items as the procurement of nuclear warheads, research and development for new weapons systems and the military part of the space program. It is generally agreed that a substantial part of the "science" allocation in the Soviet budget is spent for military R & D on aircraft, missiles, and other weapons systems, and for nuclear energy and space activities. Since 1957, expenditures for "science" have increased very rapidly. The planned expenditure for 1970 is almost five times greater than the estimated outlay in 1957. The increasing proportion of military R & D in the "science" budget is indicated by the failure to publish a detailed breakdown of the "science" budget since 1957. Even at that time, 60% of the "science" budget could not be accounted for by the breakdown published [11-12-13] In addition, some military R & D expenditures may be hidden in the large unexplained residuals in the overall budget and in the national economy sub-budget and in the unlisted allocations to such ministries as aviation industry, defense industry, electronics industry, shipbuilding, and medium machine building. Further funds for R & D may be provided under "education" and through bank credits.[14-15] Korol has thoroughly discussed the problem of deducing what is and is not covered in the "science" item.[16] In the absence of any better measure, the "science" allocation is commonly described by Western analysts as the "Soviet expenditure for science."

Direct comparison of the very uncertain estimate of Soviet national security expenditures and the outlay of the United States is further complicated by controversy about the correct factor to use in converting rubles to dollars: [17]

TABLE 1. *Ruble-to-dollar conversion factors*

	Ref.
0.90 ruble equal $1.00	a
0.50	b, c
0.45–0.50	c
0.42	b
0.28–0.40	d
0.35	e

(a) official exchange rate

(b) William T. Lee, "Calculating Soviet National Security Expenditures." *The Economic Basis of the Russian Military Challenge to the United States,* Joint Economic Committee, Subcommittee on Economy in Government, 91st Cong., 1st Sess., 1969, p. 934.

(c) Emile Benoit and Harold Lubbell, "The World Burden of National Defense," *Disarmament and World Economic Interdependence* ed. Emile Benoit (Oslo: Universitetsforlaget, 1967), p. 40.

(d) R. W. Davis, G. R. Barker and R. Fakiolas, appendix II (Soviet research and development statistics), in C. Freeman and A. Young. *The Research and Development Effort in Western Europe, North America and the Soviet Union: An Experimental International Comparison of Research Expenditure and Manpower in 1962* (Paris : Organization for Economic Cooperation and Development (OECD), 1965), p. 128.

(e) Calculated from: (1) The Soviet R&D expenditure for 1967 ($23.7 billion) cited by Joseph P. Kozlowski, "R&D in the U.S.S.R.," *Science and Technology,* No. 87 (March 1969), p. 10, and (2) total expenditure for 1967 given in Eugene Zoleski, "Central Planning of Research and Development in the Soviet Union," *Science Policy in the U.S.S.R.* (Paris: OECD, 1969), table 8, p. 100.

Two relatively independent agencies, the Stockholm International Peace Research Institute [18] and the Institute for Strategic Studies (London) [19] use the conversion ratio 0.42 ruble=$1.00. Use of this factor leads to expenditure values considerably higher than those cited by the Department of Defense. A Stanford Research Institute study [20] estimated that in 1965 one dollar was equivalent in military purchasing power to 0.45–0.50 ruble. Without doubt the relative worth of the ruble depends on the area of expenditure. Benoit and Lubbell,[21] who used the average conversion ratio 0.42 ruble=$1.00 for Soviet military expenditures, employed 0.50 ruble=$1.00 for research and development outlays. In the following discussion the value 0.475 ruble=$1.00, the mid-point of the 0.45–0.50 range cited by Lee,[22] will be used. This ratio gives estimates for Soviet R & D expenditures which are very close to the DOD figures. In view of the large uncertainties involved in using the "science" item as the measure of science expenditure and in estimating the purchasing power of the ruble relative to the dollar, the difference between the ratios 0.475 and 0.50 is not meaningful. Foster estimated his expenditure figures for the U.S.S.R. to be accurate only within 10 to 20 percent.[23] For the same reason only the current conversion factor is used even though the value of the ruble relative to the dollar has apparently declined slightly during the last decade.[24] In any case the trends are clear enough that we can give DOD the benefit of the doubt by using the conversion ratio which they appear to have used.

With the difficulties of estimating the true Soviet outlay for national security and of calculating the equivalent purchasing power of the dollar and ruble in mind, let us take a look at Dr. Foster's comparisons of Soviet and U.S. research and development efforts:

(1) Ten years ago, Soviet spending for all of their national R & D was half of ours. Today Soviet funding is estimated to be only 20% less than ours. In another few years, if the trends continue, we will clearly be in second place.[25]

The following table gives U.S. and Soviet R & D expenditures in current dollars for the period 1960–1970:

Footnotes at end of article.

TABLE 2.—TOTAL R. & D. EXPENDITURE IN CURRENT DOLLARS, UNITED STATES AND U.S.S.R.

Year	United States	Percent inc.	U.S.S.R.	Percent inc.	United States-U.S.S.R.
1970	*27.2×10⁹	3.8	‡21.5×10	13.0	5.78×10⁹
1969	*26.2	3.7	‡19.0	14.0	7.3
1968	†25.3	7.0	‡17.0	10.0	8.7
1967	23.7	6.2	‡15.0	11.0	8.5
1966	22.6	9.0	‡14.0	8.3	8.6
1965	20.4	6.4	13.0	11.0	7.8
1964	19.2	10.7	11.0	10.0	7.9
1963	17.4	10.9	10.0	14.0	7.0
1962	15.7	7.7	9.0	13.0	6.6
1961	14.6	6.0	8.0	15.0	6.6
1960	13.7	9.6	7.0	18.0	6.8

*Estimated.
†Preliminary.
‡Planned.

Note: Soviet figures are for allocations from the budget science item and from the resources of enterprises. Capital investment is not included.

Source: United States: National Patterns of R. & D. Resources, 1953–70 (Washington: National Science Foundation, 1969), NSF 69–30, p. 27. U.S.S.R.: (in rubles) 1960–68, Eugene Zaleski "Central Planning of Research and Development in the Soviet Union," in Science Policy in the U.S.S.R. (Paris: OECD, 1969), p. 100. 1969 plan, Pravda, Dec. 11, 1968, translated in CDSP, vol. XX, No. 51, p. —. 1970 plan, Pravda, Dec. 17, 1969; translated in CDSP, vol. XXI, No. 51, p. 15.

The data show that the Soviet R & D expenditure rose from about 50% of the U.S. expenditure in 1960 to almost 80% in 1970, as Dr. Foster claimed. Starting from a much lower base, Soviet spending for research and development grew more rapidly than the U.S. outlay on a percentage basis. The accompanying graph (figure 1) shows that if U.S. expenditure continues to grow at the annual rate of 4% characteristic of the 1969–1970 period and Soviet expenditure grows at only 10% per year, Soviet R & D expenditure will exceed the U.S. outlay after about 1974 or 1975; at a compounded rate of 13% per year, the cross-over would occur in 1972 or 1973.

Foster's conclusion that Russia will overtake the United States in R & D effort in the next few years is not the only one which is consistent with the data. During the entire 1960–1970 period, the difference between U.S. and Soviet R & D expenditures was almost constant at 6.5–8.5 billion dollars. As the rate of growth of U.S. R & D spending has diminished, the Soviet outlay has also grown more slowly. The parallel decrease in rate of growth may be no more than another indication that high growth rates demand larger and larger absolute increases each year, which become increasingly burdensome when the economy is growing at a much slower rate. Judging from the relatively constant difference, however, the Soviet government may be concerned only with maintaining approximate parity with U.S. research and development rather than trying to overtake it.

"(2) Looking exclusively at the funding for defense, space and atomic energy technology, the cross-over point has already occurred. In equivalent purchasing power, we find the Soviet effort funded at a rate of about $16 to $17 billion a year, while the United States puts $13 to $14 billion into comparable activities. The Soviet effort has been growing steadily at an average annual rate of 10% to 13%—which would mean a doubling in the next six to eight years if their current commitment holds. Measured in terms of effort, our research and development is actually declining.[26]

Without access to classified intelligence data, it is impossible to estimate precisely the level or rate of growth of Soviet defense, space and atomic energy R & D spending. Lee [27] estimates that 60–75% of the "science" expenditure goes for national security purposes. Presumably for research and development. If these figures are accurate, an expenditure of 12.9–16.1 billion dollars is calculated for Soviet military R & D for 1970. If one uses the 20% proportion for nonmilitary R & D, cited by Foster later on in his speech, the Soviet military R & D outlay is estimated as 17.2 billion dollars. Within the rather large degree of uncertainty these estimates are consistent with Foster's figure of 16–17 billion dollars.

Since military-related R & D makes up the major proportion of the Soviet research and development expenditure, the growth of the "science" allocation must be closely related to growth of military research and development. Between 1960 and 1970, "science" spending grew from 3.3 billion rubles to 10.2 billion rubles, giving an overall growth rate of 12% per year. By comparison, the U.S.S.R. state budget has grown at a rate of only 7% annually since 1960.[28] As a result of the difference in rates of growth, the "science" share of the budget has risen from 4.5% to 7.0%. The planned increase in the "science" outlay for 1970 is 9.3%.[29] It is likely that the growth rate of "science" spending in the U.S.S.R. will decline appreciably in the 1970's as "science" absorbs a larger and larger share of the state budget.

"(3) About 40% of U.S. R & D is for nondefense-related purposes. Only about 20% of Soviet R & D is for such purposes.[30]"

In other words, about 60% of the U.S. R & D expenditure *is* for defense-related purposes. In 1969 the estimated R & D spending of DOD, NASA, and the AEC totaled 14.0 billion dollars, roughly 53% of the total U.S. research and development expenditure of 26.25 billion dollars. The estimated 1970 R & D spending by these agencies is slightly less, 13.0 billion dollars, leading to a decrease to about 48% in their share of the total U.S. R & D effort.[31] Using the 60% figure, one estimates the defense-related portion of the U.S. R & D effort at 16.4 billion dollars in 1970. Interestingly, there is a sum of 3.4 billion dollars of apparently "defense-related" expenditure in the United States which is not covered by the DOD, NASA, and AEC expenditures.

According to Foster, "about" 20% of the total Soviet R & D outlay goes for nondefense-related purposes. That means that "about" 80% is devoted to national-security-related programs. The key word here is the very uncertain and ambiguous "about." The kind of uncertainty inherent in estimates of Soviet military R & D expenditures is shown by the 10–20% uncertainty Foster acknowledged in his own figures.[32] Foster's "80%" might reasonably be 75% or even less. It is interesting that Lee's estimate [33] of 60–75% is substantially lower than Foster's estimate. In the most recent detailed breakdown of the "science" budget, published in 1957, 60% of the total was unaccounted for. This sum probably included both military and top-priority civilian industrial R & D.[34]

"(4) During the past fifteen years, the Soviet Union has almost quadrupled its training of engineers—and today is turning them out at a rate six times ours. We are still ahead in the training of scientists, however, so in over-all research and development manpower we are roughly even. In another ten to fifteen years, the Soviet Union will be ahead by a clear margin if present trends continue.[35]"

At the hearings in the spring of 1970 before a subcommittee of the House Armed Services Committee, Foster made some more specific projections.[36] He estimated that the U.S.S.R. would graduate 275,000 university-trained scientists and engineers in 1970 compared to 116,000 in the United States.

Foster's estimates substantially understate American production of scientists and engineers and significantly overstate Soviet graduation figures. The number of scientists and engineers graduated from American universities in 1970 can be calculated from projections made in late 1969 by the U.S. Office of Education:

TABLE 3.—*Projected graduation of scientists and engineers in the U.S. in 1969–70*

Field:	*Number of bachelor's and first professional degrees*
Mathematics and statistics	30,480
Engineering	39,900
Physical sciences	20,740
Biological sciences	38,500
Total	129,700

Data taken from: Table 23, "Earned bachelor's and first-professional degrees, by field of study: United States, 1958–1969 to 1978–79," in *Projections of Educational Statistics to 1978–79* (preliminary 1969 edition, mimeographed, Washington: U.S. Department of Health, Education, and Welfare, 1970). To obtain the estimate for scientists, the estimates in the table for mathematics and statistics, physical sciences, and biological sciences were added together.

The most recent Soviet figures available are for 1968.[37] The number of scientists and engineers graduated from Soviet institutions of higher education in 1968 can be estimated in the following way: [38]

total number of specialists graduated from VUZy [39]	510,600
subtractions:	
agricultural and forestry specialists	38,500
economists	55,200
legal specialists	8,800
specialists in health and physical culture	37,300
university graduates X 0.5 [40]	20,150
graduates of teaching and library institutes	130,200
specialists in art	5,600
total subtractions	295,750
scientists and engineers graduated from VUZy in 1968	214,850

In 1955 an estimated 7,800 scientists [41] and 66,000 engineers [42] were graduated.

The discrepancy between the estimate derived above for Soviet production of scientists and engineers in 1968 and the numbers cited by Dr. Foster for 1970 cannot be accounted for by a large increase in graduation figures between 1968 and 1970. Both graduate and undergraduate enrollments started to level off in 1965. A generous estimate would be a 10% increase in annual graduation of scientists and engineers since 1968. If these estimates are accurate, the Soviet Union is graduating only about 236,000 scientists and engineers per year rather than the 275,000 claimed by the Defense Department.

Since 1960, over 90% of the Soviet science and engineering graduates have been engineers.[43] Using the Pentagon's 275,000 figure,

Footnotes at end of article.

one predicts 248,000 new engineering graduates in the Soviet Union in 1970. Dividing this number by Dr. Foster's factor of six, the U.S. output of engineers in 1970 should be about 41,300, which is close to the Office of Education projection of 39,900. In fact, however, the Soviet Union will graduate considerably fewer than 248,000 engineers this year. In 1968, 190,000 engineers were graduated from the VUZy.[44] Allowing for 10% growth between 1968 and 1970, the 1970 graduation figure will be roughly 215,000. The Soviet advantage over the U.S. in the training of engineers will be a factor of 5.4, rather than the 6.0 claimed by the Defense Department.

Although Dr. Foster noted in passing that the U.S. trained more scientists than the U.S.S.R., he did not make clear the substantial U.S. lead in this area. The U.S. will graduate about 90,000 scientists in 1970,[45] 4.0 times as many as the roughly 22,200 to be graduated in the Soviet Union.[46] According to a leading Soviet science educator, Academician S. Beliaev, director of Novosibirsk State University, each year the Soviet Union graduates five times as many engineers as the U.S., but only one-fourth to one-sixth as many physicists and chemists, one-tenth to one-fifteenth as many mathematicians, and only one-fiftieth as many biologists.[47]

As the numbers in Table 4 indicate, the Pentagon has underestimated the 1970 U.S. production of scientists and engineers by 13,000 and overestimated the corresponding Soviet figure by almost 40,000. When the corrections are made in the Pentagon's figures for the "scientist-engineer gap," the Soviet advantage diminishes from 160,000 to 106,000. As we shall see later, closer examination of the Soviet situation shows that the U.S. has the advantage in capability and productivity.

TABLE 4.—GRADUATION OF SCIENTISTS AND ENGINEERS IN THE UNITED STATES AND U.S.S.R., COMPARISON OF DOD AND INDEPENDENT ESTIMATES FOR SELECTED YEARS

[In thousands]

	1955	1960	1965	1970
U.S.S.R.:				
Scientists	7.8 (23)	13.0 (33)	15.4 (33)	22.2 (35)
Engineers	63.8 (67)	100.3 (102)	1357.4 (176)	215 (240)
United States:				
Scientists	23.6 (22)	43.0 (43)	62.6 (68)	89.8 (71)
Engineers	22.6 (26)	37.7 (31)	36.6 (36)	39.9 (45)

Note: DOD estimates are given in parentheses. The independent estimates were obtained as follows:

United States: 1955-Earned Degrees Conferred by Higher Educational Institutions 1954–55 (Washington: U.S. Government Printing Office, 1956), table 3, p. 6. The bachelor's and first-professional degrees in biological scientists, mathematics and physical sciences were added to obtain the number of scientists. Data for 1960, 1965, and 1970 were taken from Projections, Office of Education (see table 3).

U.S.S.R.: 1955—engineering graduation statistics from Nicholas De Witt, Education and Professional Employment in the USSR (Washington: National Science Foundation, 1961), p. 133. Number of scientists calculated in footnote 29.

1960—In 1960 245,800 specialists, were graduated from higher educational institutions, including 15,600 from universities; Narodnoc khoziaistvo SSR v 1961 godu (Moscow: Tsentral'noe statisticheskoe upravlenie, Gosstatizdat, 1961) p. 816. The number of engineers graduated was estimated by subtracting nonengineering specialties from the total as in the calculation for 1968.

1965—Joseph P. Kozlowski, "Scientific and Engineering Resources in the USSR: 1961–1966," in Science Policy in the USSR (Paris: OECD, 1969), table 3, pp. 140–141.

(Figures 2 and 3 are not reproduced in RECORD.)

In his speech Dr. Foster warned that the Soviet Union will be substantially ahead of the U.S. in trained manpower in ten to fifteen years if current trends continue. What are these current trends?

The number of Soviet undergraduate and graduate students began to level off in 1965. Soviet statistics indicate a very slight *decrease* since 1966 in the number of students entering institutions of higher education, as shown in figure 2. Unless the percentage of students completing their studies improves substantially the annual Soviet production of scientists and engineers at the "diplom" level will not grow substantially in the next five years and may even decrease slightly in 1972 or 1973. Perhaps even more important, the number of scientists and engineers receiving advanced research training will probably not increase to any great extent and may even decrease somewhat in the early 1970's.

The Office of Education projections show a strikingly different manpower trend for U.S. in science and engineering. The number of scientists graduated is expected to grow from approximately 90,000 in 1969–70 to 130,000 in 1977–1978, a gain of 45%. The annual graduation of engineers will grow more slowly; an overall 17% increase is expected by 1977–1978. However, the projections indicate that the number of doctorates awarded in the natural sciences and related professions will more than double from about 12,400 in 1969–1970 to almost 26,000 in 1977–1978.[48] Figure 3 shows the projections for bachelor's degrees in science and engineering.

Recent cuts in R & D funding and student support by the federal government make these projections appear somewhat too high. The substantial decrease in real R & D purchasing power in the last several years has led to a lower demand for scientists and engineers. The drop in demand will be reflected particularly in graduate student enrollment, but also in the career choices of undergraduates, causing the supply of scientists and engineers to grow more slowly than projected by the Office of Education. However, it is highly improbable that the annual graduation total of scientists and engineers will level off or decrease.

Current overall manpower trends favor the United States rather than the Soviet Union. If current trends continue, the Soviet Union will fall behind the United States in trained manpower.

In his testimony to the House Armed Services Committee, Dr. Foster predicted that although both countries currently employ 550,000 full-time scientists and engineers in research and development work, by 1985 the Soviet Union will have 800,000 full-time scientists and engineers in the R&D work force and the U.S. only 600,000.[49] These predictions are meaningless. The direct relationship between financial support for R&D and the number of scientists and engineers employed in R&D is obvious. As the science community in the United States is suddenly learning, the funds available for science are determined by political processes which cannot be predicted reliably even a year in advance. The way in which domestic and international developments will influence the level of R&D effort in 1985 cannot be predicted at even a low level of confidence in 1970.

Up to this point the discussion has been focused exclusively on the statistics used to back up Dr. Foster's assertion that the U.S. is losing its leadership in science and technology to the U.S.S.R. But as Dr. Foster himself noted, there are important qualifications to be added about the efficiency and quality of Soviet research work.

Soviet R&D is probably less productive, per man, than U.S. R&D, except possibly in a few high-priority fields.[50] In addition to institutional barriers to development of research results, the Soviet scientist simply does not have the high level of instrumentation, scientific equipment, pilot plant facilities, and assistance by technicians available to his counterparts in the United States. The need to increase R&D productivity has been a constant theme in the Soviet press in the last decade.[51]

Secondly, data concerning Soviet engineers must not be taken at face value. As a recent study of Soviet manpower resources pointed out:

"Soviet engineering graduation figures are considerably inflated by the addition of extension-correspondence and evening school graduates, who in some years comprise over 40 percent of the engineering graduates. Since these are "shorthand" graduates, i.e., their course of training is considerably "watered down" as compared to the full-time day course engineering students. Soviet annual engineering graduation statistics have to be viewed with a somewhat jaundiced eye.[52]"

The same warning undoubtedly applies to estimates of the number of engineers employed in R & D. Foster's figures on R & D manpower are further inflated by the fact that, in his own words, ". . . . some Soviet engineers are actually engaged in nontechnical tasks as well as tasks that in the United States are adequately performed by technicians and foremen rather than engineers." A substantial number of engineers are also employed in management positions, since until recently the Soviet Union has not had specialized programs for training industrial managers and business executives.

Furthermore, Soviet R & D purchasing power may be increasing less rapidly than the expenditure figures in Table 2 would indicate. The relative rates of inflation in the U.S. and U.S.S.R. must be taken into consideration. While inflation in the U.S. is considerably more conspicuous, Lee wrote recently that ". . . the scattered indicators available indicate that the cost of developing and producing technologically advanced equipment in the USSR has risen more rapidly than in the U.S." [53]

Finally, the high proportion of the total Soviet R & D expenditure devoted to defense, space and atomic energy programs is likely to diminish somewhat in the future. The OECD study of Soviet science policy points out that:

". . . while rapid technological advance could be achieved in the past by adapting Western technology to Soviet conditions, the advance in Soviet technology in a number of major industries is increasingly dependent on innovations by Soviet scientists and technologists." [54]

In recent years the rate of economic growth in the U.S.S.R. has declined to a point where the Soviet margin over the U.S. is only one percentage point in the annual rate of growth.[55] In order to sustain even this level of growth, the Soviet Union will have to devote an increasing share of its R & D effort to improving its industrial productivity in non-military areas.

To sum up the discussion:

(1) Total Soviet R & D expenditure is now 80% as large as U.S. spending for the same purposes and is growing more rapidly. The rate of growth of the Soviet R & D outlay has decreased significantly in recent years and will probably continue to decline. Barring a drastic reversal of current trends, however, total Soviet R & D expenditure may surpass the U.S. outlay within the next several years.

(2) The 80% share of Soviet R & D spending attributed by Foster to defense related projects is the upper limit; the actual value may be somewhat lower. Even a lower value, say 70%, would give an expenditure comparable to the U.S. expenditure. The Soviet outlay for military R & D is undoubtedly larger than the comparable U.S. outlay and growing more rapidly. At the same time an increasing portion of the Soviet R & D expenditure is likely to be devoted to nonmilitary purposes.

(3) The Defense Department has underestimated the 1970 U.S. graduation of scientists and engineers by 13,000 and overestimated the corresponding Soviet figure by almost 40,000.

In the 1970's, the U.S. supply of scientists and engineers will increase at a higher

Footnotes at end of article.

rate than the scientific and engineering manpower pool in the Soviet Union, contrary to Foster's estimates.

(4) Pentagon estimates of Soviet engineering manpower should be decreased substantially in order to be comparable to U.S. data in terms of level of training and type of employment.

(5) Predictions made by DOD about the number of scientists and engineers who will be employed in R & D in the U.S. and U.S.S.R. in 1985 are nonsense. The DOD figures are useful only to scare Congressmen into increasing appropriations for military R & D. Unpredictable domestic and international developments in the early 1980's will be the principal factor in establishing the level of the U.S. and Soviet R & D efforts in 1985, not the trends prevailing in the late 1960's.

(6) Soviet research and development is considerably less productive than the U.S. R & D effort, except in a few high-priority areas. Even if the U.S.S.R. puts more financial and human resources into R & D than the U.S., the U.S. has a good chance of staying ahead in research productivity.

U.S. RESPONSE TO THE SOVIET R & D EFFORT

The analysis of Soviet R & D and of its implications for U.S. security presented in Foster's speech, perhaps best characterized as "the-Russians-have-it" analysis, is not a sufficient guide to rational decision-making for U.S. research and development. From this kind of oversimplified and superficial analysis has grown the arms race spiral of the 1950's and 1960's. Each side has strained to keep ahead of the other, driven by the fear that his adversary might somehow achieve a decisive technological advantage. The moves and countermoves have come almost automatically, without adequate evaluation of their real effect on American security.

It does not follow automatically that ". . . the Soviet Union is now about to seize world technological leadership from the United States" [56] simply because R & D spending is increasing more rapidly in the Soviet Union than in the United States. Even if the U.S.S.R. spends more than the U.S., nothing is proven by comparison of expenditure levels. More money and more results are not necessarily two sides of the same coin.

Neither is it true that falling slightly behind the U.S.S.R. in some fields, if it should happen, would lead to our subjugation. After all, the Soviet Union has achieved military parity with the U.S. while continuing to lag badly in a number of important areas of science and technology, including development of automation techniques and computers, chemical industry, biology, and overall industrial R&D.

The crucial question which the Congress must answer in voting funds for the 1971 and succeeding fiscal years is whether or not the national security of the United States requires an increase in R & D funds for military purposes or even that current funding levels be maintained. Furthermore, Congress must decide how the Defense Department's R & D funds should be distributed along the research-development spectrum shown in Table 5.

In his speech Dr. Foster emphasized what he called the U.S. "research hedge." Dr. Foster and Secretary Laird made it clear in their testimony before the House Armed Services Committee that the term "research hedge" referred to the research and exploratory development categories of the DOD R & D budget, plus some parts of the advanced development item.[57 58] Another name frequently used for this relatively fundamental end of the research-development spectrum is "technological base." Foster and Laird believe that by doing certain exploratory work, the U.S. will ". . . know what developments in weapons are possible and practical, for ourselves and for potential enemies." [59] Armed with this knowledge, the U.S. will be able to understand and even to anticipate Soviet weapons development. Having done the exploratory work, the U.S. could quickly produce and deploy the "defensive" systems needed to counter any perceived Soviet threat to American security.

TABLE 5.—DEFENSE DEPARTMENT R. & D., BY ACTIVIT

Activity	Purpose	Estimated distributions of obligations, fiscal year 1970 (percent)
Research	Phenomena-oriented research, often supported more heavily in areas where possible future military applications exist.	5.0
Exploratory development.	Exploring feasibility of breadboard devices, prototype components, and systems; pointed toward a military problem area.	11.5
Advanced development.	Producing experimental hardware for operational testing and experimentation in military use.	12.6
Engineering development.	Designing weapons systems for operation; major line item projects.	13.7
Operational systems development.	Development, test design, improvement of systems or equipment approved for production and development.	40.0
Management and support.		16.2
Emergency fund		1.0

Note: Marvin Berkowitz, The Conversion of Military-Oriented Research and Development to Civilian Uses (Praeger; New York, 1970), pp. 106–107.

By emphasizing the "research hedge" in his speech, Foster obscured the reality that research and exploratory development together account for only a small proportion of the Defense Department's R & D expenditures. In 1969 and 1970 these two categories received a total of only 16.8% of the military's R & D funds.[60] The real emphasis in military R & D is in readying weapons systems for production and deployment, not in acquiring information which may have a long-term payoff.

It is extremely difficult to judge how much money should be spent on military research and development. Each proposed project must be evaluated individually to see if the resources are really needed more for this item than for other purposes. Critics have long charged that vast amounts of money are wasted by research and development of unnecessary weapons systems and by the common practice of "concurrency" in development and production of new weapons. In his recent book, *Report from Wasteland,* Senator William Proxmire has thoroughly documented these very serious shortcomings.[61] The Defense Department itself has lent credence to claims that many weapons systems lack clearly-defined missions by changing the rationale of the proposed multi-billion dollar American ABM system again and again. Critics' claims that "concurrency," that is, simultaneous development and production of new weapons systems, has caused costs to skyrocket, have been substantiated by the Defense Department's recent shift to the so-called "fly-before-buy" policy under which prototypes will be thoroughly tested before decisions are made about production and deployment of a new weapon. It is probable that several billion dollars could be saved each year by eliminating "systems without a mission" and by implementing the "fly-before-buy" policy.

Although assessing the desirability of producing a new weapons systems is far from simple, it is still less difficult than determining how much should be spent in the "technological base" area. Research and exploratory development are risky; the benefit to the nation of any particular project is neither obvious nor immediate. Yet, as Secretary Laird and Dr. Foster emphasized, U.S. military capability "5, 10, and 20 years in the future" will depend on basic and applied research being done now.[62]

In recent years the Department of Defense has placed too little emphasis on the initial stages of the R & D process, research and exploratory development, and too much on the middle and final stages of advanced development, engineering development and operational systems development. The statistics in Table 6 and Figure 4 show that as the U.S. involvement in Southeast Asia deepened, increasing emphasis was placed on areas with a short-term payoff.

Footnotes at end of article.

TABLE 6.—SUMMARY OF RESEARCH AND EXPLORATORY DEVELOPMENT FUNDING—NEW OBLIGATIONS. DEPARTMENT OF DEFENSE, FISCAL YEARS 1964–71

[In millions of dollars]

	Fiscal years—							
	1964	1965	1966	1967	1968	1969	1970	1971
Research and exploratory development:								
Current dollars	1,511	1,511	1,523	1,455	1,319	1,279	1,226	1,267
Index	100	100	101	96.3	87.3	84.6	81.1	83.9
Constant (1964) dollars, index	100	96.5	94.0	87.9	77.7	72.0	64.0	61.4
Percent of all R.D.T. & E	21.6	23.5	22.7	20.3	18.0	16.5	16.5	17.2
Index	100	109	105	94.0	83.3	76.4	76.4	79.6

Note: Current dollar expenditure. Data for (a) 1964–68, from Berkowitz, Conversion of Military-Oriented Research, p. 111, (b) 1969–71, from U.S. Congress, House of Representatives, 91st Cong. 2d sess., Committee on Armed Services, Subcommittee No. 3, Hearings on Research Development, Test and Evaluation Program for Fiscal Year 1971, N.A.S.C. No. 91–53, pt. 2. (Washington: U.S. Government Printing Office, 1970), pp. 7948. Corrections to 1964 dollars were made using data on Federal Government purchase of goods and services. The index value was calculated as below:

$$R_x \text{ \& D. expenditure for fiscal year 196x, measured in 1964 dollars} = \frac{\text{Fiscal year 196x R. \& D. expenditure in current dollars}}{\left(\frac{\text{Fiscal year 196x deflator}}{\text{Fiscal year 1964 deflator}}\right)}$$

$$\text{deflator for a given year} = \frac{\text{Fedcral purchase of goods and services in given vear. current dollars}}{\text{Federal purchase of goods and services in given year, 1958 dollars}}$$

Data on Federal purchase of goods and services in current dollars and in 1958 dollars were obtained from Survey of Current Business, vol. 46, No. 2, vol. 47, No. 2 and vol. 50, No. 6; (Washington: U.S. Department of Commerce, Office of Business Economics).

(Figures 4 and 5 are not reproduced in the RECORD.)

Research and exploratory development decreased from a high of 23.5% of the overall DOD RDT & E budget in 1965 to 16.5% in 1968 and 1969. Measured in current dollars the decrease was from $1,511 billion in 1964 to $1,225 billion in 1970. When these figures are corrected for monetary inflation, the drop is much steeper; the FY 1970 expenditure for the "technological base" is only $965 million when measured in 1964 dollars. In other words, real expenditure on our "technological base" has dropped at least 40% since 1964. If the costs due to the growing complexity and sophistication of research, usually estimated to rise at 5% annually,[63] were included, the calculated drop in purchasing power would be even more drastic. The estimated level and distribution of Defense Department RDT & E funds for FY 1971 is shown in Figure 5.

In the book *The Economics of Defense in the Nuclear Age*, Charles Hitch and Roland McKean singled out several reasons why basic and applied research were likely to be persistently underemphasized by the military. The military bureaucracy undervalues future outputs and, like all bureaucracies would prefer to avoid ventures of uncertain success. The authors pointed out that

"Here there seem to be no countervailing tendencies of any importance. Fascination with high performance hardware reinforces the emphasis on weapons systems. So does optimism about the prospects of advanced weapons systems. It is allegedly much easier to get money from Congress for the development of impressive weapons systems with undoubted military utility if they succeed, than to get it for components with no highly specific end use in mind, or for basic or applied research that is even further from practical military applications." [64]

These more or less traditional constraints have been further strengthened since 1964 by diversion of resources to the immediate and expensive task of fighting a war in Southeast Asia. As the U.S. gradually withdraws its military forces from Southeast Asia, the defense budget may decrease substantially. This, coupled with the inevitable urge to cut back on long-term payoff items in times of fiscal problems, could lead to a further decrease in funds for research and exploratory development. It is encouraging to see that DOD has kept the "technological base" at the same level in the FY 1971 budget as in FY 1970, although cutting back on the RDT & E total.

The American response to the rapidly growing Soviet R & D outlay should not be an indiscriminate increase in expenditures for military research and development. By making sure that only those systems are developed which will demonstrably meet an urgent need and by putting more emphasis on thorough testing of prototypes before making production decisions, the overall military R & D expenditure might even be decreased.

In the area of research and exploratory development, however, funds should be sharply increased, at the expense of weapons systems development if need be. It is here, in basic and applied research, that any revolutionary developments will occur. Concern about protecting our technological base in weaponry must not be cast in terms of outspending the Soviet Union. Let us be more concerned about what the U.S. needs to spend than about how much the U.S.S.R. can spend. By shifting our military R & D emphasis towards the "research hedge," we can de-escalate the arms race, yet be able to respond quickly to any threatening technological development in the Soviet Union.

Note added in proof: The most recent projections by the U.S. Office of Education are not signicantly different from those made in late 1969. Graduation of scientists is projected to increase from 88,000 in 1969–70 to 125,500 in 1977–78, a gain of about 46%. The number of engineers graduated will rise from an esitmated 41,100 in 1969–70 to 49,000 in 1977–78, a 19% increase. The annual award of doctor's and first professional degrees in science and engineering is projected to increase by more than 100%.

Data compiled from U.S. Office of Education, *Projections of Educational Statistics to 1979–80* (prepublication data, tables 23 and 25) cited in *A Fact Book on Higher Education* (Washington: American Council on Education, December 1970), p. 70.223, p. 70.227.

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FOOTNOTES

[1] "When one Soviet physicist was asked by an American colleague the cost of an accelerator, the physicist said he did not know. 'To get the money, all we had to say was that you had one'." "Brahmins of Redland," Time, June 2, 1958, p. 21; cited by Mark G. Field, "Soviet Science and American Society," Journal of International Affairs, Vol. XIII, No. 1, p. 24.

[2] Dr. John S. Foster, Jr., speech before the American Newspaper Publishers Association, New York, N.Y., April 23, 1970.

[3] Washington Post, editorial, May 1, 1970.

[4] Pravda, April 14, 1970; translated in Current Digest of the Soviet Press (hereafter abbreviated CDSP), Vol. XXII, No. 15, p. 6.

[5] U.S. Congress, House of Representatives, Committee on Armed Services, Subcommittee No. 3, Hearings on Research, Development, Test and Evaluation Program for Fiscal Year 1971, 91st Cong., 2d Sess., 1970, H.A.S.C. No. 91–53, Part 2.

[6] Emile Benoit and Harold Lubbell, "The World Burden of Nation Defense," *Disarmament and World Economic Interdependence*, ed. Emile Benoit (Oslo: Universitetstforlaget, 1967), p. 30.

[7] Abraham S. Becker, *Soviet Military Outlays Since 1955*, RM–3886–PR (Santa Monica, California: The Rand Corporation, 1964), pp. 12–13, 34–45.

[8] William T. Lee, "Calculating Soviet National Security Expenditures," *The Economic Basis of the Russian Military Challenge to the United States*, U.S. Congress, Joint Economic Committee, Subcommittee on Economy in Government, 91st Cong., 1st Sess., 1969, p. 932.

[9] Institute for Strategic Studies, *The Military Balance 1969–70*. (London: The Institute for Strategic Studies, 1969), p. 5.

[10] J. G. Godaire, "The Claim of the Soviet Military Establishment," *Dimensions of Soviet Economic Power, U.S. Congress*, Joint Economic Committee, 87th Cong., 2d Sess., 1962, p. 37.

[11] Becker, *Soviet Military Outlays*, pp. 12–13, 34–35.
[12] Godaire, "Soviet Military Establishment," p. 37.
[13] Lee, "Soviet National Security Expenditures," p. 933.
[14] Becker, *Soviet Military Outlays*, pp. 12–13, 34–35.
[15] Lee, "Soviet National Security Expenditures," p. 933.
[16] Alexander G. Korol, *Soviet Research and Development* (Cambridge, Massachusetts, The M.I.T. Press, 1965), pp. 199–234.
[17] *Ibid.*
[18] Stockholm International Peace Research Institute, *SIPRI Year Book of World Armaments and Disarmament 1968/69* (New York: Humanities Press, 1970), pp. 200–203.
[19] Institute for Strategic Studies, *Military Balance*, p. 5.
[20] Lee, "Soviet National Security Expenditures," p. 934.
[21] Benoit and Lubbell, "World Burden," p. 40.
[22] Lee, "Soviet National Security Expenditures," p. 934.
[23] Committee on Armed Services, Subcommittee No. 3, *Hearings*, p. 7957.
[24] Lee, "Soviet National Security Expenditures," p. 933, 934.
[25] Foster, speech, April 23, 1970.
[26] *Ibid.*, p. 934.
[27] Lee, "Soviet National Security Expenditures," p. 933.
[28] Budgeted expenditures: 1960, 73.1 billion (new) rubles, T'sentral'noe statisticheskoe upravlenie, *Narodnoe khziaistvo SSR v 1960 godu* (Moscow: Gostatizdat, 1961), p. 885; 1970, 144.5 billion rubles, V. Garbuzov, *Pravda*, December 17, 1969, translated in *CDSP*, Vol. XXI, No. 51, p. 15.
[29] Garbuzov, *Pravda*, Decmber 17, 1969.
[30] Foster, speech, April 23, 1970.
[31] For FY 1970 the estimated figures are: DOD $7.76 billion; NASA, $3.79 billion; AEC, $1.35 billion, giving a total of $12.9 billion. "Science Resources Studies Highlights." NSF 70–28, (Washington: National Science Foundation, August 14, 1970), p. 3.
[32] Committee on Armed Services, Subcommittee No. 3, *Hearings*, p. 7957.
[33] Lee, "Soviet National Security Expenditures," p. 933.
[34] Nancy Nimitz, *Soviet Expenditures and Scientific Research*, Memorandum RM–3384–PR (Santa Monica, California: The Rand Corporation, 1963), p. vii.
[35] Foster, speech, April 23, 1970.
[36] Committee on Armed Services, Subcommittee No. 3, *Hearings*, p. 7956.
[37] Tsentral'noe statisticheskoc unpravlenic, *Norodnoe khoziaistvo SSR v 1968 godu* Moscow: Izdatel'stvo "Statistika," 1969), p. 689.
[38] Joseph P. Kozlowski, "Scientific and Engineering Resources of the USSR: 1961-1966," *Science Policy in the USSR* (Paris: Organization for Economic Cooperation and Development, 1969), Tables 3 and 4, p. 689.
[39] VUZ is the Soviet acronym for "Vysshee uchebnoc zavedenic," meaning higher educational establishment. VUZy is the plural of VUZ.
[40] Based on the composition of graduates from forty USSR universities in 1965. Science graduates were 50.6% of the total, Kozlowski, "Scientitic and Engineering Resources," Table 4, p. 143.
[41] In 1954–55 there were 15,600 university graduates; Nicholas DeWitt, *Education and Professional Employment in the USSR* (Washington: National Science Foundation, 1961), p. 333. In 1955–56, 50.5% of the students in Soviet universities were enrolled in mathematics and the physical sciences; DeWitt, p. 213. Assuming the same proportion of students holds for the 1955 graduates, there were 7,880 scientists graduated from the universities in 1955. Almost all Soviet Scientists in the physical and life sciences and in mathematics are trained in the universities; Kozlowski, "Scientific and Engineering Resources," p. 144.
[42] DeWitt, *Education*, p. 333.
[43] Based on data for 1961–1966 given in Kozlowski, "Scientific and Engineering Resources," Table 3, pp. 140–141, and graduation figures for 1967 and 1968 in *Norodnoe Khoziaistvo* (1968), p. 689.
[44] In 1968, 20,150 scientists were graduated from the universities (university graduates x 0.50). Subtracting this from the total of 214,850 scientists and engineers gives 194,600 engineers.
[45] See Table 3. Subtraction of the 39,900 engineers from the total of 129,700 scientists and engineers leaves an estimated 89,800 scientists.
[46] The estimated 20,150 scientists graduated in 1968 plus 10%.
[47] S. Beliaev, "A Strategy for Education," *Izvestia*, September 20, 1969, p. 2; translated in *CDSP*, Vol. XXI, No. 38, p. 12.
[48] Data for bachelor's degrees taken from Table 23. "Earned bachelor's and first professional degrees, by field of study: United States, 1958–59 to 1978–79," in *Projections of Educational Statistics to 1978–79*, (mimeographed, preliminary 1969 edition; Washington: Office of Education, U.S. Department of Health, Education and Welfare, 1970). To obtain the estimate for scientists, the figures in the table for mathematics and statistics, physical sciences, and biological sciences were added together.

Estimates for doctor's degrees were obtained in the same manner from Table 25. "Earned doctor's degrees (expect first-professional, by field of study: United States, 1958–59 to 1978–79)."
[49] Committee on Armed Services, Subcommittee No. 3, *Hearings*, p. 7956.
[50] R. Amann, M. H. Berry, and R. W. Davies, "Science and Industry in the USSR," *Science Policy in the USSR* (Paris: OECD, 1969), p. 392.
[51] For recent examples see: G. Migirenko, "The Tempos of Scientific Search," *Pravda*, March 28, 1970, p. 2, in CDSP, Vol. XXII, No. 13, p. 9 (problems of raising labor productivity in science); Yu, Tsaregorodtsev, "The New Machine: From Blueprint to Series Production," *Pravda*, March 30, 1970, p. 2, in CDSP, Vol. XXII, No. 13, p. 9 (incentives for introducing new methods in factories still inadequate): M. A. Lavrentyev, "From Idea to Machine," Literaturnaya gazeta, January 1, 1970, p. 10, in Current Abstracts of the Soviet Press, Vol. II, No. 4, p. 5 (problem of innovation in industry).
[52] Kozlowski, "Scientific and Engineering Resources," p. 159.
[53] Lee, "Soviet National Security Expenditures," p. 933.
[54] Amann, Berry and Davies, "Science and Industry," p. 382.
[55] Joseph S. Berliner, prepared statement, in Joint Economic Committee, Subcommittee on Economy in Government, *The Economic Lasis of the Russian Military Challenge*, p. 908.
[56] Foster, speech, April 23, 1970.
[57] U.S. Congress, House of Representatives, Committee on Armed Services. *Hearings on Military Posture and Legislation to Authorize Appropriations During the Fiscal Year* 1971 . . . 91st Cong., 2d Sess., 1970, H.A.S.C. No. 91–53, p. 6858.
[58] Committee on Armed Services, Subcommittee No. 3, Hearings, p. 7948.
[59] Ibid., p. 7953.
[60] *Ibid.*, p. 7948.
[61] William J. Proxmire, *Report from Wasteland: America's Military-Industrial Complex* (New York: Praeger Publishers, 1970).
[62] Committee on Armed Services, Hearings, p. 6858.
[63] President's Task Force on Science Policy, "Science and Technology: Tools for Progress" (Washington: U.S. Government Printing Office, 1970), p. 24.
[64] Charles J. Hitch and Roland N. McKean, *The Economics of Defense in the Nuclear Age* (New York: Atheneum, 1966), p. 255.

HAMLINE UNIVERSITY,
St. Paul, Minn., April 27, 1971.

To: Congressman Harrington.
From: Robert Mikulak.
Re: DOD estimates of Soviet manpower engaged in R & D.

I. Number of scientists and engineers engaged in R & D.

(a) There is a critical distinction between the *total number* of scientists and engineers who do some R & D work and the number of *full-time equivalents*. A scientist or engineer may spend considerably less than full-time on his R & D activities. Comparisons must be made on the basis of full-time equivalents—not total number.

(b) Calculation of full-time equivalents from total number depends critically on a detailed knowledge of the tasks performed by various categories of workers. There are two formidable problems involved here (at least two). Soviet data on manpower engaged in "science and scientific services" includes activities of a routine nature (geological surveying, hydrometeorological data collection, museums, libraries) which are not included in Western statistics on R & D. Secondly, detailed job descriptions which would allow one to calculate full-time equivalents are not published. The best independent Western study of Soviet R & D manpower (Davies and Berry, for 1966) results in two estimates which differ by 30%, depending on the assumptions made. It is difficult to believe that the DOD estimates are any more certain.

(c) Foster's FY 1971 posture statement referred to "full-time R & D scientists and engineers" while the FY 1972 document speaks of "qualified scientists and engineers employed in research and development." As you can see from the table below, the estimate for 1968 (FY 1972 statement) is about 40% higher than the estimate for 1969 (FY 1971 statement). DOD has either: 1) shifted to citing total numbers rather than full-time equivalents, 2) adopted a new definition of R D, 3) suddenly come upon much different base data than was used last year, 4) made grossly inaccurate estimates. Furthermore, why is the DOD estimate of U.S. R & D manpower for 1968 about 50,000 lower than the NSF estimate?

COLLECTED ESTIMATES OF UNITED STATES AND SOVIET SCIENTISTS AND ENGINEERS ENGAGED IN RESEARCH AND DEVELOPMENT

	1965	1966	1968	1969
United States	[1] 498,500	----------	[1] 565,000	----------
			[2] 515,000	[3] 540,000
U.S.S.R.	[4] 588,000 (engineers)	----------	----------	----------
	[5] 454,000	[5] 476,000	[2] 745,000	[3] 550,000
	[5] 631,000	670,000	----------	----------

[1] "National Patterns of R. & D. Resources (Washington, D.C.: NSF, 1970, NSF 69-30), p. 11.
[2] DOD fiscal year 1972 posture statement on R. & D.
[3] DOD fiscal year 1971 posture statement on R. & D.; U.S. total=800,000.
[4] Joseph P. Kozlowski, "Scientific and Engineering Manpower Resources of the U.S.S.R.: 1961–66," in Science Policy in the U.S.S.R. (Paris: OECD, 1969), p. 1968.
[5] R. W. Davies and M. J. Berry, "The Research and Development Effort in the Soviet Union: A Reconsideration of the Manpower Data," Appendix C in Science Policy in the U.S.S.R. (Paris: OECD, 1969), p. 534. The lower figure is their cautious estimate, the higher their more generous estimate.

II. Annual graduation statistics for scientists and engineers.

(a) There have been substantial changes since the FY 1971 posture statement in DOD estimates for 1970 graduations of scientists and engineers: U.S.—22% (26,000), U.S.S.R.—down 10% (28,000). The effect is to narrow the difference between the two countries graduations by 34% (54,000). If DOD's estimates for 1970 are revised downward 34% between March 1970 and March 1971, how reliable are the predictions five years ahead?

(b) The following information is useful

in trying to estimate the number of scientists and engineers graduated annually in the Soviet Union:

(1) There is approximately a five year lag between admission to and graduation from a higher educational institution. Admission statistics are available through fall 1970; the plan figure for 1971 has been published. Briefly, enrollment in higher educational establishments (VUZy), which expanded rapidly in the early '60's, is no longer increasing significantly (1960–1965, +44%; 1966–1971, +2%). (see graph).

(2) Recent discussion of the plan for 1971–1975 indicates that admissions will not expand more rapidly than the population. The emphasis will be on quality, not quantity. This appears to be a continuation of the policy followed from 1966–1970.

(3) Between 1950 and 1968, the annual number of graduates in all fields amounted to an average of 69.5% of those admitted five years earlier. The success rate has been highest among students in the day division and lowest among correspondence students. Since the relative proportion of day students relative to evening and correspondence students is being increased slowly, the overall success rate will probably increase in the future. Data for 1969 and 1970 indicate an overall 74% success rate.

(4) The proportion of science and engineering graduates in the total graduation figure has fluctuated. The 1965–1968 average is 42.5%. The most recent breakdown of enrollment by field (for 1968) does not reveal any increase in the proportion of science students. Interestingly, the proportion of scientists and engineers among the graduates has consistently been several percentage points below the proportion of science and engineering students in the total enrollment.

(c) The DOD estimate of 359,000 scientists and engineers to be graduated in 1976 may have been derived by linear extrapolation of graduation figures from the middle '60's. As shown on the accompanying graph, this would yield an estimated 1976 graduation total of 845,000. Assuming that the proportion of scientists and engineers remains at the 1965–1968 average of 0.425, the estimated 1976 graduation of scientists and engineers would be 360,000.

This kind of linear extrapolation is grossly misleading since it does not reflect the virtual plateau in admissions since 1966. A graduation total of 845,000 for 1976 would represent 93% of the planned entering class for 1971. This is a far higher success rate than that currently attained by the day students (1969, 83%)—not to mention the evening students (72%) and correspondence students (59%). The two latter categories accounted for 49% of the admissions in 1968.

The plateau in admissions should result in a leveling off in graduations five years later. In other words, graduations should reach a plateau value in 1971 and remain approximately constant at least until 1976 and possibly longer.

My best estimates of scientists and engineers in the U.S.S.R. and those from DOD posture statements are listed below:

	Mikulak	DOD (March 1970)	DOD (March 1971)
1960:			
United States	[1] 81,000	74,000	83,000
U.S.S.R.	113,000	135,000	145,000
1970:			
United States	[1] 129,000	116,000	142,000
U.S.S.R.	[2] 236,000	275,000	247,000
	[3] 268,000		
	[1] 162,000		181,000
1976: United States	[4] 270,000		359,000
	[3] 290,000		

[1] To obtain this estimate U.S. Office of Education data were used (Projection of Enrollment Statistics to 1979–80) (prepublication data), table 23, cited in A Fact Book on Higher Education (Washington: American Council on Education, 1969). P 70.223. The figures for mathematics and statistics, engineering, physical sciences, biological sciences were added together.

[2] Assuming the increase in graduation of scientists and engineers between 1968 (last published figures) and 1970 to be proportional to the increase in admissions between 1963 and 1965 (10.5 percent). This assumes a constant success rate (69.5 percent) and a constant proportion of scientists and engineers among the graduates (42.5 percent).

[3] Calculated from a higher success rate 1970 (74 percent) than the 1950–65 average (69.5 percent). This assumes that the proportion of scientists and engineers remained at the 1965–68 average value of 42.5 percent of total graduates.

[4] Calculated using the 1950–68 average success ratio of 69.5 percent.

(e) One final comment. The category "scientists and engineers" is inadequate. In the USSR about 90% of the science and engineering graduates are engineers. In the U.S. on the other hand, engineers made up about 32% of the 1970 total of science and engineering graduates. The proportion of engineers is slowly decreasing. Subdivision of the graduation figures for 1968 gives the following:

Scientists:	
U.S.	75,200
USSR	20,150
Engineers:	
U.S	37,400
USSR	195,000

The U.S. produced almost four times as many scientists as the USSR. This lead appears to be increasing.

FARMERS DO GOOD WORK

HON. GARNER E. SHRIVER

OF KANSAS

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. SHRIVER. Mr. Speaker, we often take for granted the productive genius of the American farmer. One American farmer today can produce enough food for 46 persons. The Newton Kansan recently editorialized on the productivity achieved by Harvey County, Kans., wheat farmers on the 1971 crop. Significantly, the editorial points to the willingness of farmers to use better methods in wheat farming which are the result of research conducted by State agricultural schools and extension services.

Under leave to extend my remarks in the RECORD, I include the editorial and also take this opportunity to salute the Newton Kansan which recently started its 100th year of service to the Newton community:

FARMERS DO GOOD WORK

Harvey County wheat farmers did themselves proud with the 1971 crop.

The tentative official report released earlier this week shows that they produced a record 41 bushels an acre of the grain on 86,000 acres. That's a total production of 3,526,000 bushels.

It's more than 200,000 bushels above what they produced on 90,000 acres the year before.

And it's far higher than the 1,822,000 bushels that went through the combines that traversed 135,000 acres back in 1953.

Part of the difference, of course, was the weather. The 1971 crop in most places had almost ideal weather throughout the season. Weather at harvest time also was good for the most part.

But part of the difference is the willingness of the farmers to use better methods in wheat farming. Many of these methods have been worked out by state agricultural schools and extension services.

The real test comes, however, with the acceptance of these methods by the wheat producer. If he refuses to accept the tests, then the research work goes for naught.

But in most cases the farmers are eager to try these new methods for they know that their proper use means more money in the bank.

And in these days when the farmer is caught in the squeeze between what he has to pay for what he must buy, and what he sells his produce for, any new method that can hike his income is not only a help to him, but it also is a help to the community, for it means more money will be in circulation.

1971 HUNT PUBLIC OPINION POLL

HON. JOHN E. HUNT

OF NEW JERSEY

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. HUNT. Mr. Speaker, so that I might better represent the views of my constituency on the major current issues, I prepared my fifth annual public opinion questionnaire which was delivered to every household in the First Congressional District of New Jersey. The results have now been tabulated by a private, independent firm and I would like to share them with my colleagues.

1. Do you favor President Nixon's proposal to reorganize the Executive Branch by reducing the twelve cabinet departments to eight?

Camden: Yes, 58.2%; no, 19.5%; undecided, 22.3%.

Gloucester: Yes, 59.3%; no, 19.6%; undecided, 21.1%.

2. Regarding consumer protection, do you think the federal government should: a. limit its role to consumer education; b. push for more stringent controls of manufacturers; or c. continue to enforce existing laws?

Camden: a. 10.2%, b. 74.9%, c. 14.9%.

Gloucester: a. 10.2%, b 70.8%, c. 19.0%.

3. Do you favor returning a share of federal tax revenues to state and local governments to help solve local problems?

Camden: Yes, 76.5%; no, 16.7%; undecided, 6.8%.

Gloucester: Yes, 78.2%; no, 16.5%; undecided, 5.3%.

3. Do you favor additional state taxes instead of revenue sharing?

Camden: Yes, 8.5%; no, 83.8%; undecided, 7.8%.

Gloucester: Yes, 9.4%; no, 83.3%; undecided, 7.3%.

5. What policy do you favor for Vietnam: a. The President's policy of withdrawing U.S combat troops by stages while strengthening the South Vietnamese to assume responsibility for their own security and negotiating for release of U.S. prisoners; b. withdraw all troops immediately leaving our POWs in Communist hands; c. publicly setting an absolute date for withdrawal, regardless of events in the meantime and without securing release of our prisoners of war?

Camden: a. 78.5%, b. 11.9%, c. 9.7%.

Gloucester: a. 86.0%, b. 7.5%, c. 6.5%

6. To fight inflation and unemployment, which actions are you willing to have the federal government take: a. impose wage and price controls; b. reduce domestic program spending: c. reduce national defense spending?

Camden: a. 64.6%; b. 15.9%; c. 19.5%.
Gloucester: a. 58.3%; b. 17.0%; c. 24.7%.

7. Regarding national health insurance, which do you favor: a. a program financed and operated by the federal government with a tax increase to finance it; b. a federally-operated program financed by employer and employee contributions; c. income tax credits for the cost of purchasing private health insurance; d. no new legislation in this area?

Camden: a. 17.6%; b. 32.6%; c. 29.6%; d. 20.2%.
Gloucester: a. 14.8%; b. 31.1%; c. 30.1%; d. 24.0%.

8. Do you favor: a. more vocational training at the high school level; b. more federal grants and loans to college students; c. school bussing to effect racial quotas?

Of a total of 11,854 resonding from both counties, the preferences in absolute numbers for each of the choices are as follows:

a. 10,016.
b. 1,552.
c. 286.

CURRENT ECONOMIC POLICIES

HON. JOHN J. DUNCAN

OF TENNESSEE

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. DUNCAN. Mr. Speaker, I would like to put in the RECORD the following statement from the Knoxville, Tenn., Journal of August 19 concerning the current economic policies we are following and labor's opposition:

CURRENT ECONOMIC POLICIES

President Nixon's dramatic shift in economic policy has been matched in abruptness by the change in opinions expressed by union chieftains on the concept of wage-price controls.

Organized labor has sharply attacked the President's new plan, as evidenced by the spate of anti-Nixon comments in recent days. Typical was that of AFL–CIO President George Meany, who said the new Nixon plan favors business and is "patently discriminatory as far as American workers are concerned."

The tune coming out of the AFL–CIO only a few days ago, however, was different. At the organization's executive council meeting in San Francisco earlier this month the official position of the labor federation on wage and price curbs was outlined as this:

"If the President determines that the situation warrants extraordinary overall stabilization measures, the AFL–CIO will cooperate so long as such restraints are equitably placed on all costs and incomes including all prices, profits, dividends, rents and executive compensation, as well as employes' wages."

Under the orders announced Sunday by Nixon ALL wages, prices and rents are frozen for 90 days. "Profits" as such are not frozen beyond the freeze on prices. Dividends also are not frozen because the legislation passed by Congress enabling the President to enact controls does not include the power to freeze dividends.

This may be enough of a loophole, albeit tiny, to enable Meany to ignore the federation's Aug. 9 statement. Judging from the total reaction, organized labor is far more interested in politics than economics, anyway. (One labor official reportedly answered an inquiry as to what could be done about the situation in this manner: "Vote Democratic.")

The new economic policy does at least postpone raises already scheduled for many workers, but it also adversely affects many businesses and industries. Some have been caught in the middle by having experienced increases in the prices of their raw materials but not yet having increased their own prices to compensate. Others, who deal in imported goods, for instance, will find themselves paying much higher prices due to the 10 per cent surcharge on imports but will be unable to raise their selling prices due to the freeze.

There are adequate adverse effects to go around. It is hard to justify Meany's change of position on the basis that workers have been harmed more than business has been, especially when it is acknowledged that the workers also will be enjoying the benefits of not having to pay higher prices on the goods they purchase. That is the same, in effect, as getting a raise in salary.

AN ANALYTICAL HOUSEWIFE

HON. JOHN M. ZWACH

OF MINNESOTA

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. ZWACH. Mr. Speaker, many times in the past I have pointed out that our high cost of living is not caused by high prices to our producers who are today lagging 30 percent behind the rest of our economic structure.

I would like, at this time, to insert in the CONGRESSIONAL RECORD, an editorial by Peter Johnson of the Royalton Banner in our Minnesota Sixth Congressional District, which dwells on this subject.

Editor Johnson's words need to be remembered by all of those who complain about high food prices.

The editorial follows:

AN ANALYTICAL HOUSEWIFE

Part of the "inflation" that we complain about is due to changing standards of living rather than to the declining purchasing power of the dollar. That is the conclusion of one housewife who compared her food budget in 1960 with one of a more recent date. She took a typical current shopping list that rang up a total of $24 on the supermarket's cash register. On going over the list. She discovered that much of what she is now buying at the grocery store is not groceries.

There were paper towels and paper napkins itemized at $1.66. In the old days, people took time to home launder and reuse cloth towels and napkins. Then there was 59 cents for dog food. In the old days, Rover used to eat table scraps. There was an item of $1.79 for bug spray on the current shopping list ". . . to execute what we used to swat—and 89 cents for fabric softener where we formerly depended on a windy day." There was also $1.59 for shampoo and band-aids—"in 1960 some of us were shampooing with soap and bandaging with strips of worn-out shirts." Another item, $3.75 for light bulbs and a thermos bottle would formerly have shown up on the "hardware" bill. This housewife discovered that of her $24 grocery bill, groceries cost less than $16. Summing up, she found that her food bill for 1960 was $971.57. Household items that year came to $347.98. This past year, she paid only $3 more for food, for household items she paid $725.82!

In spite of the kicking about inflation, consumers so far have shown little inclination to turn their backs on the conveniences and luxuries that have been brought to them by the world's most efficient, retail, mass-distribution system.

WORK IS PREFERABLE TO WELFARE

HON. JOHN R. RARICK

OF LOUISIANA

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. RARICK. Mr. Speaker, last Thursday in the President's address to a joint session of Congress, he referred to the ever-increasing burden of welfare, including many able-bodied people who simply refuse to work, borne by the working element of our society. In his speech, President Nixon said:

A strong and healthy spirit means a willingness to work.

Hard work is what made America great. There could be no more dangerous delusion than the notion that we can maintain the standard of living that our own people sometimes complain about but the rest of the world envies, without continuing to work hard. The "good life" is not the lazy life, or the empty life, or the life that consumes without producing. The good life is the active, productive, working life—the life that gives as well as gets.

No work is demeaning or beneath a person's dignity if it provides food for his table and clothes and shelter for his children. The thing that is demeaning is for a man to refuse work and then ask someone else who works to pay taxes to keep him on welfare.

Let us recognize once and for all that any work is preferable to welfare.

At the same time, the President was chastising those who misuse welfare.

Recent newspaper reports indicate that the number of people on the District of Columbia welfare rolls increased by 52 percent over the last year's total, that 11.4 percent of the Nation's Capital is on welfare. Further, the District's Director of Social Services admitted the possible presence of ineligible welfare recipients.

At the same time newspapers carried accounts of members of the black caucus here in Congress criticizing President Nixon for stating "that any work is preferable to welfare." The District delegate reportedly accused the President of "shallow racist rhetoric," and stated further, "I know who is on welfare in this country." The delegate's retort seems to be racism in reverse considering that while the population of Washington, D.C., is 71 percent Negro, the records indicate that only 11.4 percent of the District's population are on the welfare rolls. On the contrary, this low welfare percentage speaks highly of the District's Negro population.

But, since there are admittedly ineligible welfare recipients in the District and the President has now accepted the leadership in a back-to-work move, the American people will be expecting positive action from the Chief Executive directed toward the freeloaders in his Federal City. Perhaps the President could induce his Justice Department attorneys to be as aggressive against those who take advantage of welfare as they are against busing little children; and in fact, he might even institute a program to require welfare recipients to carry identification cards with photographs and fingerprints to eliminate the temptation of dual addresses and dual checks.

One thing is certain, there are still more working taxpayers in the United States than there are welfare recipients, and the taxpayers want the welfare messes cleaned up, including the Federal judges who have a consistent record of accommodating every welfare complaint and grievance.

I include several newsclippings which follow:

[From the Washington Star, Sept. 10, 1971]

BLACKS IN CONGRESS ASSAIL PRESIDENT'S WELFARE COMMENT

(By Ronald Sarro)

President Nixon's remarks on welfare recipients in his address to a joint session of Congress have angered black members of Congress.

Members of the House's Black Caucus charged the President with using racist invective in the speech yesterday, and said his economic program apparently is geared to help the rich at the expense of poor blacks.

And the only Negro in the Senate, Edward W. Brooke, R-Mass., said he wished the President had not included the remarks, which Brooke said detracted from an otherwise solid economic message.

The 13 members of the black caucus, of which Brooke is not a member, boycotted Nixon's State of the Union message in January. But at least six black congressmen were at yesterday's session for the President's economic message.

Plugging his welfare reform proposal, Nixon said welfare is suffocating taxpayers, and has become "a massive outrage against the people it was designed to help. Let us get rid of a system where going on welfare is more profitable than going to work."

Emphasizing the need for hard work to keep America great, Nixon said "The 'good life' is not the lazy life, or the empty life, or the life that consumes without producing. The good life is the active, productive, working life—the life that gives as well as gets."

He said. "No work is demeaning or beneath a person's dignity if it provides food for his table and clothes and shelter for his children. The thing that is demeaning is for a man to refuse work and then ask someone else who works to pay taxes to keep him on welfare.

INTERRUPTED BY APPLAUSE

"Let us recognize once and for all in America that any work is preferable to welfare," The President said.

While Nixon was interrupted by applause five times during his welfare remarks, blacks reacted sharply to them, particularly his call for any work in preference to welfare.

Rep. Ronald V. Dellums, D-Calif., said the speech was "hypercritical, political and prejudicial." When Nixon says any work is better than welfare, he asked, is he suggesting prostitution, gambling or narcotics peddling as suitable alternatives?

Del. Walter E. Fauntroy, D-D.C., said Nixon engaged in "shallow racist rhetoric. I know who's on welfare in this country.

"When we get the oil-rich millionaires off the welfare of depletion allowances, and the farmers off the $55,000-a-year welfare of the soil bank program, maybe I'll be willing to at least consider whether a family of four limited to $1,600 a year should be adjudged unwilling to work," Fauntroy said.

NIXON "A RACIST"

Rep. William Clay, D-Mo., said the remarks 'smack of racism because our President is a racist." Clay said welfare recipients should not be expected to work for less than a "living wage." He suggested that Nixon trade places with a recipient to learn the facts.

Brooke, the most moderate of the blacks in Congress, said Nixon should have left out his statement that no work is too demeaning for any man. He said it was "rhetoric that didn't add anything and can only alienate."

Brooke said, "There are demeaning jobs in the nation" and most are held by blacks and poor whites.

Others joined the black congressmen in criticizing the remarks. Sen. Daniel K. Inouye, D-Hawaii, said the "sweeping indictment of welfare recipients was a grossly unfair one. Certainly most recipients would rather be working . . . but hasn't the President read the unemployment list—6.2 percent?"

[From the Washington Post, Sept. 12, 1971]

DISTRICT OF COLUMBIA WELFARE INVESTIGATIONS URGED ON HILL

Charging that the District's public assistance caseload includes thousands of ineligible recipients, members of the House subcommittee that controls the city budget have told city officials that Congress should order a return to the practice of welfare investigations.

Rep. William H. Natcher (D.-Ky.), chairman of the House District Appropriations Subcommittee, said the city has "hundreds on the rolls—it might even run into the thousands—that are not entitled to welfare payments."

Welfare rolls have doubled here in the two years since the welfare investigators were phased out, local officials say. But they deny the increases are due to the lack of investigators, attributing the increased caseload to other factors.

Rep. William J. Scherle (R-Iowa), a new member of the subcommittee, told the city's welfare director that "it is cheaper in the long run to provide the funds for investigators to ferret out these people than to let them hang on and bleed the taxpayers of funds that should go to some other constructive purpose."

If the city government abolished the use of welfare investigators because of public opposition, Scherle added, "then I think it is time for Congress to insist that these investigators should be provided whether they like it or not."

The comments of both men were made in July during the subcommittee's closed hearings on the District's billion-dollar 1972 budget request. A transcript of the hearings was released yesterday.

The welfare department's staff of 92 investigators, at one time the largest of any city in the United States, was eliminated by the city government two years ago. Investigation and surveillance of welfare recipients here reached its height between 1962 and 1968 with the backing of Sen. Robert C. Byrd (D-W. Va.), then chairman of the Senate District Appropriations Subcommittee.

The city quit using investigators after court decisions struck down the "man-in-the-house rule," eliminated residency requirements for welfare, and held that welfare recipients can refuse to allow investigators into their homes. Winifred Thompson, director of social services, has also testified in the past that unannounced midnight visits by investigators undermine welfare clients' sense of self-respect.

Miss Thompson told Natcher that the city's public assistance caseload has doubled in the two years since the investigators were phased out, from 14,880 cases in fiscal 1969 to 34,182. Her department anticipates a caseload of 36,000 by the end of the current budget year.

However, Miss Thompson and Human Resources Director Philip J. Rutledge emphasized that the increase in the caseload, which rose by 52 per cent during the last year alone, was not due to ending the use of investigators. They said the increase can be traced to court decisions, higher unemployment, new federal programs, more attempts being made to seek out those who are eligible for benefits and changes in local policy.

"What we are doing, we are beginning to catch up with a very restricted welfare policy in the District of Columbia that existed over many, many years," Miss Thompson testified. "In the last three years there has been a softening of that policy and certainly it is reflected in the increased rolls."

The city now checks for ineligible recipients through a "quality control system" required by the Department of Health, Education and Welfare. It includes taking a 10 per cent sample of the caseload, checking information given by those recipients' homes. Miss Thompson said she would like to hire 45 more social workers so the sample could be expanded to 20 per cent.

Natcher, who has not concentrated publicly in the past on the issue of welfare, called the 10 per cent sample system "not adequate" and "not in the best interests of our capital city."

"The welfare program in our capital city has been operated in an excellent manner up until the time that we started the increase, which cannot be laid completely at the door of the Supreme Court," Natcher said.

". . . People that are hungry and suffering in Washington should be taken care of . . . If they are entitled to be on the welfare rolls, we want them there. At the same time, if we have thousands on there who are not supposed to be there, they ought to come off. It is not right to the taxpayers and the city of Washington to have them on the rolls."

In a recent interview, Miss Thompson said there are some ineligible welfare recipients, but not the thousands indicated by Natcher and Scherle. She said her department's samples have shown that in Aid to Families with Dependent Children—with a caseload of 19,692, the largest type of welfare—the number of ineligible recipients is about 7 per cent of the total. She said this is slightly above HEW's "tolerance level" of 5 per cent.

"We don't want to go back to the old type of investigations, but we do believe there has to be a careful policing of the rolls," she added.

[From the Washington Star, Sept. 11, 1971]

DISTRICT OF COLUMBIA WELFARE ROLLS UP BY 52 PERCENT IN YEAR

(By Stephen Green)

The District's welfare case load has increased 52 percent during the last year.

Winifred Thompson, director of social services, said last night that 84,176 persons—11.4 percent of the District population—now are on the welfare rolls.

The welfare population in the Nation's Capital will continue to soar, Miss Thompson said, citing projections that by July of next year about 112,000 District residents will be on welfare.

According to federal statistics, the percent of the District population on welfare is second only to Los Angeles which has more than 12 percent of its residents on welfare. The District's population is 756,000.

The rate of growth of welfare recipients in the District was the highest in the country as of February, according to the statistics.

Miss Thompson's figures were given in response to inquiries about the welfare rolls based on congressional claims that a lack of inspections leads to welfare frauds in the city.

Rep. William H. Natcher, D-Ky., chairman of the House District Appropriations Subcommittee, had told Miss Thompson he thinks "you have hundreds on the rolls—it might even run into the thousands—that are not entitled to welfare payments."

He complained of a lack of inspections at a July closed hearing of his subcommittee. A transcript of the hearing was released today.

Miss Thompson, according to the transcript told Natcher the city eliminated its welfare investigators two years ago after court decisions ruled welfare recipients may refuse to let investigators into their homes.

However, at Natcher's request, she proposed that she be permitted to hire additional employees to increase the "sampling" of welfare eligibility to 20 percent of the cases from the current 10 percent.

Miss Thompson told the subcommittee the city welfare case load has more than doubled in two years. In fiscal year 1969 there were 14,880 cases. Last year there were 22,488 and now there are 34,182. One case may include several members of the same family.

". . . There are other reasons than the lack of inspections that have caused the rolls to double. Miss Thompson said, citing liberalization of eligibility requirements by courts and other branches of government.

"I am not going to say that we don't have ineligibles on the rolls. I think it would almost be impossible and prohibitively costly to police the rolls to assure 100 percent pure rolls," she said, adding that a "field inquiry" is made of all complaints and few cases of fraud are discovered.

The biggest chunk of District welfare cases—more than half—falls into the category of aid to dependent children, followed by aid to the disabled.

Mayor Walter E. Washington has asked Congress for a $20 million increase in the welfare budget.

CALIFORNIA RURAL LEGAL ASSISTANCE

HON. JEROME R. WALDIE

OF CALIFORNIA

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. WALDIE. Mr. Speaker, I have recently received a letter from a lawyer in San Mateo County, Calif. In the letter, Mr. Moriguchi expresses his support of the California Rural Legal Assistance program. I wholeheartedly agree with Mr. Moriguchi's statements, and hope that my colleagues will note this letter as representative of the acclaim this fine legal services organization has received from members of the legal profession in California. The letter is as follows:

JUNE 30, 1971.

Re: Your letter of June 14, 1971.

HON. JEROME R. WALDIE,
Civic Center,
Concord, Calif.

DEAR CONGRESSMAN WALDIE: I have read with great interest your letter and the enclosures. It is quite tragic to see the actions of certain politicians in trying to deny access to courts and adequate legal representation to the poor.

California Rural Legal Assistance represents one of the best legal services program in this nation. Its record in representing its clients is outstanding and is a goal that other legal services programs should strive for. This is not limited to the so-called "impact cases," but also includes the day-to-day cases of its clients.

To allow politicians and other special interest groups to manage, by financial means, lawyers who aggressively, with reason, represent their clients, even though it creates extreme embarrassment to those in established positions, is a very sad state of affairs. It is tantamount to say that the present distinctions of rich—poor, majority—minority, representative—non-representative, and the like, should exist, especially at the expense of the poor, oppressed and minority groups.

I strongly believe that those administering the OEO and other poverty programs should be aware of the problems of the poor and disadvantaged, and be sympathetic to the plight of the class. In reality, in many cases, we see an antithesis of the situation. Mr. Lewis K. Uhler would seem to be one of the prime examples of putting a "square peg in a round hole." Obviously he is put in his position as a means of control—to preserve vested interests, an obvious conflict of interest. Mr. Uhler's political background also strongly indicates the above assertion.

I wholeheartedly agree with your position as to CRLA and CSOEO. Needless to say, your statements are succinct and to the point. As a legal service attorney with the Legal Aid Society in San Mateo County, it is quite evident to me that due to the controls placed upon poverty programs—both political and monetary—that the War on Poverty is, in fact, a means to merely control and not to provide affirmative programs to meet the needs of the poor.

Very truly yours,

EUGENE T. MORIGUCHI,
Attorney at Law.

ADOPT A VETERAN

HON. JERRY L. PETTIS

OF CALIFORNIA

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. PETTIS. Mr. Speaker, one of the great tragedies of our time is the fact that many of our brave and loyal veterans, who have so selflessly served their country, are living out their lives in a bleak and lonely existence. It is incumbent upon all of us to see that these men are not forgotten.

For this reason I have inserted a letter written by Mrs. Helen Walraven of Victorville, Calif., encouraging people to adopt a veteran. I wish to salute Mrs. Walraven on her endeavor and urge all citizens to participate in this most worthy effort.

The letter follows:

"ADOPT" A VETERAN

About two months ago I read an article about a veteran who died of lung cancer. When he was buried there were no friends or relatives to attend his funeral.

He died alone.

I wrote the chaplain at Wadsworth Hospital about it. The answer I got back was that there were a lot of veterans who have no relatives and are alone. And it would be nice if there were people who would like to write to them, because they are alone and receive no mail.

Maybe there are more people in this area who would like to adopt a veteran and write to him and even send him a package on his birthday.

They have given so much; can't we give some back by adopting one of them?

Some of the veterans have to be in the hospital for a long time. Most of them are forgotten and by adopting one of them, we can show them we still do care and they are not forgotten. If you are interested in adopting a veteran write to: Chaplain Dean W. Geary, Hospital (Wadsworth), Sawtell and Wilshire Blvds., Los Angeles, Calif., 90073.

Also if you want to contribute to the Chaplain's Fund, it will help many patients who need things such as toothpaste, razor blades, soap, etc. Many times the patients come to the hospital with none of these things and the VA does not furnish them. And these funds will enable the chaplains to help more needy patients. May God bless you all.

HELEN WALRAVEN.

NATURAL GAS SHORTAGE

HON. J. J. PICKLE

OF TEXAS

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. PICKLE. Mr. Speaker, when the fuel shortage began to be felt in the east coast area in the fall of 1970, a large Eastern newspaper expressed editorial astonishment at the alarming development. The shortage came, the paper said, as "a stunning surprise."

It was stunning enough, all right; but the shortage came as no surprise to the people whose business it is to produce the Nation's fuel supplies. For some years they had been warning that the United States was in danger of running out of low-cost energy. And they had explained why this danger was imminent.

The reasons they gave them are valid now. And it is interesting to note that some of those reasons appear in a report, released a few days ago, of the Interior Department's Advisory Committee on Energy.

Two of the causes of what this report calls "the prospect of serious and costly shortages of energy in the near future" are of special significance when considered in connection with recent announcements by major gas companies that they must curtail their deliveries to industrial consumers.

The report of the Advisory Committee on Energy—which is headed by Dr. John J. McKetta, Jr., professor of chemical engineering at the University of Texas—points a finger at Federal regulation of natural gas "at artificially low levels which caused demand to exceed supply" as one factor which has discouraged expansion of investments to develop new energy supplies. The report says another such factor is found in attacks on price increases for energy even though the increases still left real prices of fuel lower than they were 10 years ago.

In a section dealing specifically with natural gas, the report cited the results of the general ignoring of warnings by men in a position to know that Government regulatory policies inevitably would lead to an energy supply shortage.

What happened in the case of natural gas is that discovery of new reserves has not kept pace with production during a period when consumption was steadily increasing year after year. Expenditures for exploration and development remained constant over the last 14 years, while new reserves found per dollar spent dropped sharply.

The average cost of drilling, completing, and equipping wells has more than doubled during this period—rising from $72,000 per well in 1953 to $147,000 in 1969. In the face of this greatly increased cost, wellhead prices have not kept pace with prices of other commodities. In fact, the real wellhead price has actually declined since 1960.

The irony is that even as artificially depressed wellhead prices caused a drastic slowdown in discovery of new reserves, strictly regulated wholesale prices at the marketplace accelerated the trend. The predictable result was an adverse effect

on industry aggressiveness and industrial competence.

The genesis of this situation may be traced back to the Supreme Court's ruling in the midfifties that the wellhead price of natural gas sold in interstate commerce came under the jurisdiction of the Federal Power Commission.

After this ruling, the Commission took the stand that its obligation was to keep natural gas prices low even in the face of skyrocketing costs. The push of these costs against the controlled price ceiling discouraged investment in the gas industry, reducing funds available for exploration and development.

Along with this, gas producers are forced to operate under sales contracts that may blow up in their faces at any time.

Such contracts between producers and interstate pipeline companies are valid as to price and delivery terms only so long as the Federal Power Commission chooses to regard them as valid. This is so even though the Commission approved the contracts in the first place. It can step in at any time and order changes in the terms.

This can be accomplished without removing the power of the FPC to control prices. Enactment by Congress of legislation to make these contracts valid and binding would be a step toward meeting the present gas supply shortage and avoiding the national crisis which lies ahead unless effective action is taken.

We should make this beginning during the present session. I hope we will.

SERGEANT BECKWITH DIES IN ACTION

HON. CLARENCE D. LONG

OF MARYLAND

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. LONG of Maryland. Mr. Speaker, a fine young man from Maryland, Sgt. Harry M. Beckwith, was recently killed in action in Vietnam. I would like to commend his courage and to honor his memory by including the following article in the RECORD:

[From the Baltimore Sun, Aug. 20, 1971]

SERGEANT BECKWITH DIES IN ACTION

The only son of an Army sergeant major now stationed at Fort Meade was shot down by hostile fire while serving in Vietnam as an observer in a helicopter, the Department of Defense reported yesterday.

The Department had listed Sgt. Harry M. Beckwith 3d as missing after the helicopter was shot down in flames March 24 while on a mission in the area of the border-demarcation zone.

The body was recovered, but the helicopter carrying it encountered hostile fire, and during a quick maneuver, the body rolled out and fell in the jungle. It was found later and identified only recently, Sgt. Maj. Harry M. Beckwith, Jr., said yesterday.

Born in Flint, Mich., Sergeant Beckwith was a graduate of the Seoul High School, in Korea. Returning to the United States with his father in 1966, he enlisted and received his basic training at Fort Dix, N.J.

The first of his four tours of duty in Vietnam began in March, 1968, as a radio operator. When he returned in March, 1969, he asked for retraining in armored reconnaissance, volunteered and returned as a member of AA Troop 3d Squadron, 5th Cavalry Regiment in October, 1969.

WOUNDED TWICE IN '70

Sergeant Beckwith had been wounded when his vehicle struck a mine in February, 1970. In April of the same year he was critically wounded in a night battle while commanding an armored unit.

He received the Silver Star for holding off the enemy with another track commander while other units escaped. His father, who was in Vietnam at the time, was present at the ceremonies.

Returning to the U.S. for treatment, "he beat two Army medical boards" and returned to join his old outfit near the border zone, according to his father.

Besides his father, Sergeant Beckwith is survived by his mother, Evva Beckwith, and his grandparents, Mr. and Mrs. Harry M. Beckwith, Sr., of Flint. Memorial services were being planned last night.

DAVENPORT PROJECT FOR NATURE STUDY BY HANDICAPPED CHILDREN

HON. FRED SCHWENGEL

OF IOWA

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. SCHWENGEL. Mr. Speaker, the August issue of Soil Conservation features an article on a program developed at Fairmount School to enable handicapped children and others, to learn more about nature. While the end results of the project are most commendable, I am even more impressed with the manner in which the project was developed. This project is an excellent example of the results which can be achieved by cooperation between local voluntary and civic organizations, and local, State, and Federal governments. The article follows:

BIRDS AND BEES AND FLOWERS AND TREES

(By Herb Davison and Lynn Betts)

Davenport loves children—children in wheelchairs, children on crutches, children wearing braces. This Iowa city has designed a nature-study center especially for them.

The 6-acre center, now in its second year of operation, is a project in outdoor education complete with turtles, frogs, birds, and snakes. It even has its own patch of poison ivy.

The center is located behind Fairmount School, which houses both a center for children with learning problems and a preschool for children with cerebral palsy.

Dr. Paul Staskey, research director for the Muscatine and Scott counties school system, which includes Fairmount, estimates that 1,000 physically, mentally, or socially handicapped children from a 5-county area visit the center ever year. Boy Scouts and other groups are permitted to use the center on weekends and at other times when handicapped children are not using it. Dr. Staskey says that he wants teachers, students, and other visitors to the center to return home with ideas on how they can develop similar areas.

Plans for the center were started in 1969 when $87,000 in federal funds was offered through an Elementary and Secondary Education Act (ESEA) Title III grant. The money is to be used over a 3-year period for educational materials and a nature observation building.

Local people took it from there. Community Health Services, Inc., donated the land. United Community Services pledged $100 annually for maintenance. The city of Davenport allowed the use of a 125-foot strip of city property. The United Cerebral Palsy Association of Scott County pledged more than $1,300.

Volunteers from local organizations did most of the work. Davenport Jaycees blazed a trial for the cement path. They were followed by 14 Marine reservists and 7 cement finishers from Local Union 544. A local Navy Seabees unit offered more young muscles.

Builder's Cement Company of Davenport opened its plant on several Sundays and provided a truck and driver to deliver cement. Boy Scouts, members of the Wheel and Canvas Club, and local members of the National Campers and Hikers Association planted trees and shrubs donated by the Scott County Conservation Board. Girl Scouts served lunch to volunteer workers.

Many other organizations and businesses offered their services, including the Scott County Soil Conservation District and the Soil Conservation Service. SCS helped school officials with a conservation plan for the nature center and the design for a 3-foot deep pond.

The center has a section of prairie grasses, several small spaces for gardens, a small campfire-picnic area, and restroom facilities.

Volunteers didn't do all the work in preparing the center, according to Miss Clara Emlen, who was hired last fall as outdoor education consultant for Fairmount and other schools in all or part of five counties around Davenport. "Each child attending Fairmount School planted his own tree, put his name on it, and is taking care of it," Miss Emlen says.

Explaining how the use of the outdoor center can be incorporated into all areas of learning, she says, "The children can use trees for exercises in math, or collect samples of tiny organisms from the pond for study under a microscope."

Fairmount School children call Miss Emlen the "nature lady." She says, "The children are learning conservation as a way of life. They're diligently following the rule that nothing is yours to keep—it's yours to look at and put back for someone else."

THE LIBRARY OF CONGRESS AND ITS EQUAL OPPORTUNITY PROGRAM

HON. FRANK T. BOW

OF OHIO

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. BOW. Mr. Speaker, in recent months, numerous statements have been made with respect to the Library of Congress and its equal opportunity program. In my capacity as the ranking minority member of the full House Appropriations Committee and particularly as ranking minority member of the Subcommittee on Legislative Appropriations, I have long taken an interest in the Library of Congress. I would find it abhorrent if the Library of Congress failed to adhere to the basic principles of democracy in which we all believe. However, I feel that recent criticisms of the Library's employment policies are totally unjustified and I feel it is necessary to make known certain basic facts in order to set the record straight.

First of all, may I address myself to

the statistics of minority employment in the Library. Approximately 36 percent of the Library employees are black employees. Although there are a substantial number of black employees in the GS–1 to GS–4 levels, it is important to remember that of the 1,327 employees in the GS–5 to GS–8—$6,938 to $12,337—category, 45.2 percent of these are black and the GS–9 to GS–11—$10,470 to $16,404—category 13.9 percent are black. Recently the Library, through its intensified recruitment efforts has appointed two highly qualified blacks to supergrade positions at salaries of $28,129 and $32,546.

Late in June of this year 11 staff members of the Library were separated because they participated in a 4-day illegal work stoppage, sitting in the main reading room. Repeatedly, those persons participating were urged by Library officials and the Library's fair employment practices officers to return to work and present their grievances in an orderly manner.

When certain employees on the fourth day continued their sit-in and work stoppage, they were informed both orally and in writing by the General Counsel that if they did not return to work, they would be separated from the staff. Four returned to work, 11 persons who did not return on this warning were indeed separated. Although the separated employees were black, the issue was a job grievance—that is, the grade classification which is allocated by standards issued by the Civil Service Commission—not a racial one and none of those involved had presented their grievances through established channels.

To the charge that the Library of Congress does not have an affirmative equal opportunity plan, I must answer that the Library was one of the first in the Federal establishment to set up a fair employment practices program. In January 1962 such a program was instituted. Fair employment practices officers were appointed and given wide latitude in investigating individual charges of discrimination. At that time the Librarian of Congress met with a representative group of black employees and with all administrative and supervisory personnel to stress the Library's total commitment to fair employment practices. Since then the fair employment practices officers have been available to all staff members who had a complaint of discrimination. In all instances since that time a majority of these officers have been black. Their responsibilities as fair employment practices officers have taken precedence over their regular job duties. In fact, the Librarian appeared before the Appropriations Committee in fiscal year in 1963, and requested a full-time staff to handle the fair employment program but was instructed by the committee to handle it through regular administrative channels.

With respect to the Library's regulations for grievances and appeals, the Library has long had a published policy statement which has been made available to the staff. Under the terms of this regulation, the aggrieved staff member may select one member of the board from the staff of the Library, the Librarian appoints a second member of the board from the staff and these two members select a third member who serves as chairman. The aggrieved staff member has a right to counsel. Although the functions of the appeals board are advisory, the findings and considerations of the board are given great weight by the Librarian in his decisionmaking process.

In November 1970, the Librarian of Congress met again with supervisory personnel to discuss his firm intention to have no discrimination in the Library as well as to reiterate the importance of staff communications and later he appeared at a staff association meeting to answer questions including those relating to fair employment practices. In May 1971 an announcement was issued to the staff assuring them of the Librarian's intent to appoint persons solely with reference to their fitness for their duties. He also announced a concerted and sustained effort at recruitment of minority staff, an improvement in the internal system of posting vacancies, his intention to conduct a statistical survey of minority employment in the Library in line with Government-wide procedures, the immediate expansion of the fair employment practices program to make it responsive as possible to current needs, and a further emphasis on the improvement of communication between supervisors and staff.

On July 26, 1971, the Librarian announced an expanded fair employee practices program to be renamed the equal opportunity program and the creation of counselor positions in addition to equal opportunity officers. A coordinator was named and the Deputy Librarian of Congress was designated as the Library officer responsible for the program.

The provisions of the expanded equal opportunity program were announced to the staff on September 1. Three equal opportunity officers in addition to the coordinator were named as well as seven counselors. Ten of these 11 positions are presently held by blacks. These individuals are spread geographically in the Library's permanent buildings and rental space. Under this regulation, a staff member or a group of staff members or a qualified applicant for a position in the Library of Congress can communicate his charge of discrimination to a counselor. The counselor will attempt to resolve the matter to the satisfaction of the complainant. If he cannot, he will forward the matter to the coordinator along with his findings and conclusions. It may then be assigned to an equal opportunity officer who will conduct any further investigations necessary and will resolve the matter if possible. If the complainant is not satisfied with his findings the matter will be brought before the coordinator and the other equal opportunity officers for an appropriate recommendation to the Deputy Librarian of Congress. The Deputy Librarian may concur or not concur in the recommendation. If the complainant is not satisfied with the Deputy Librarian of Congress' conclusion, he may appeal to a hearing officer. Upon notification of such an appeal, the Library will request another agency of the Government to provide them with a qualified hearing officer who has had training in discrimination cases and who is so certified by the Civil Service Commission.

The director of personnel shall receive the findings of the hearing officer and shall take corrective action if necessary.

I think it is in the wisdom of the Congress to commend the Library in taking these most appropriate steps and allow them to proceed without interruption.

I have made the above points for those interested Members of Congress who no doubt have been somewhat concerned about the Library's employment practices which have, I believe, been improperly represented in public announcements during recent months.

WASHINGTON REPORT

HON. ROBERT PRICE

OF TEXAS

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. PRICE of Texas. Mr. Speaker, it is my policy to publish a monthly newsletter at my own expense to keep my constituents in the 18th District of Texas advised of my activities in their behalf. The following is the text of my latest Washington report:

WASHINGTON REPORT FROM CONGRESSMAN BOB PRICE

As a result of the statewide Congressional redistricting recently effected by the Texas Legislature, 13 new counties have been combined with 22 other counties which are presently part of the 18th Congressional District. As the U.S. Representative of the 18th District, I am taking the opportunity provided by the August Congressional Recess to travel through several of the 13 new counties. Even though this new Congressional District will not become effective until January of 1973, I want to become better acquainted with the residents of these counties as soon as possible.

In an effort to meet and talk with as many people as time permits, I am holding the following series of public meetings:

TOWN HALL MEETINGS

August 24, 1971

Archer, 10:30 am: Prairie Grove Ranch, 6 miles south of Windthorst, Hwy. 281.

Henrietta, Noon: District Courtroom, Clay Court House.

August 25, 1971

Knox City, 2:30 pm: Knox County, City Cafe.

Crowell, 4:00 pm: Foard County, Community Center.

Vernon, 7:30 pm: Wilbarger County Auditorium, Forum Room.

August 26, 1971

Quanah, 9:30 am: Hardeman County, First National Bank, Community Room.

Spur, 3:30 pm: Dickens County, East Ward School Auditorium.

Childress, 7:30 pm: Childress County, Junior High School Auditorium.

HORSE SLEEPING SICKNESS

Secretary of Agriculture Clifford Hardin has acted swiftly in the face of critical dangers to horses and human health posed by the disease Venezuelan equine encepha-

iomyelitis (VEE) which has spread from Latin America through Central America and Mexico and into South Texas. This dreaded disease, which takes the form of a rare type of sleeping sickness, is a real health hazard to people and is fatal to horses.

In response to my urgings and those of other concerned individuals and organizations the Secretary has declared a state of national emergency, a declaration that has enabled the Federal government to focus all necessary resources on the problems of curing the effects of this deadly disease and preventing its spread to other parts of Texas and the Nation.

I have also written to the Secretary and requested him to meet with Public Health Department officials for the purpose of releasing for commercial production and distribution the experimental vaccine that has proved so effective in combating VEE.

AGRICULTURE LEGISLATION

Pesticide Control: The Agriculture Committee, of which I am a member, is now working on a third version of the Administration's Pesticide Bill. While many areas of agreement have been reached, chief disputes center on: the role of a Scientific Advisory Committee, penalties for violations, judicial review procedures, and the question of payments to farmers and others owning pesticides deemed unsafe.

Rural Development: The Agriculture Committee rural development hearings have been focusing on a bill proposed by the Farm Credit Administration which would greatly expand Federal Land Bank and Production Credit Association operations. Present committee disagreements center on whether: farm real estate loans should be raised to 100% of appraised value; Federal land banks should finance middle-income rural housing; land bank operations and controls should be centralized in Washington; and, land bank reserve requirements should be reduced.

Payment Limitations: In a surprise move, House urban and suburban representatives succeeded in attaching a $20,000 payment limitation to $10 billion USDA appropriations bil for fiscal year 1972. The Senate refused to take similar action and after a great deal of persuasive arguing on the part of farm state members, chief backers of the amendment agreed to drop their proposal. I spent a lot of hours on this; I am glad my efforts paid off.

FARM TRUCK RULES BEING CHANGED

It is most gratifying that the Transportation Department has rethought its new farm truck and driver regulations and has proposed a series of appropriate revisions patterned along the lines of legislation I had previously introduced (see June–July Washington Report). Under these revisions: minimum driver age will be 18; no investigations need be made into driver background, character, and driving record; and, no Federal special written or road tests need be taken.

THE ATOMIC ENERGY COMMISSION SPEAKS WITH FORKED TONGUE

HON. JOE SKUBITZ

OF KANSAS

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. SKUBITZ. Mr. Speaker, I have read with great interest a Reuters dispatch from Geneva, Switzerland, that appeared in the Washington Post of September 9. It tends to prove once again how the Atomic Energy Commission talks out of both sides of its mouth—with a forked tongue, as our Plains Indians would note.

This House is aware that its Members from Kansas have repeatedly expressed their concern about the safety to human life and the environment in Kansas if a proposed atomic waste depository is established in abandoned salt beds in our State.

We have convinced the Congress to deny authority to purchase the salt mine lands until many additional tests are carried out and the safety factors are more assured than they are now.

The Atomic Energy Commission ostensibly has gone along with these limitations. It has now promised in two recent scientific meetings in Kansas that it intends to carry out the very tests that we have noted were not carried out. It knows that the test facility is, at best a contingent enterprise. It must know, if its people can read the plain meaning of the English language, that if burial of high-level dangerous nuclear waste proves unsafe, there can be no burial. If for example, the geology of the Kansas salt beds will allow atomic particles to be carried into water basins and endanger the lives of people a thousand miles south of Kansas for thousands of years in the future, the Kansas site is untenable. And now it has been determined that there are substantial water flows in adjacent salt mines at Lyons—an indication of great hazard.

But Atomic Energy Commission spokesmen apparently are not very concerned about the law or the Commission's obligations under it or the scientific test findings.

The AEC representative, attending the United Nations Atoms for Peace Conference in Geneva told the gathering of European nuclear scientists that our Government plans to bury, and I now quote from the Reuters dispatch from Geneva:

All highly radioactive waste products 1,000 feet deep in salt deposits under the State of Kansas.

The point is that before the Kansas facility has been proved safe, before the AEC can even begin to know, much less guarantee, that it has found a safe place to bury atomic wastes, the agency is publicly declaring its firm plans to bury the waste in Kansas.

Well, Mr. Speaker, I have said it before and I repeat it now. Kansas and Kansas officials will have something to say about these plans.

The majority of the people of Kansas are no longer impressed with this Government agency. They may ultimately reject the waste facility whatever the tests will show.

Mr. Speaker, I include the Reuters dispatch from Geneva, together with an additional story written by Thomas O'Toole, of the Washington Post, dealing with the Atoms for Peace Conference in the RECORD at this point:

UNITED STATES MOUNTS DRIVE TO EXPORT

(By Thomas O'Toole)

GENEVA, Sept. 8.—The American plan to export uranium enrichment technology envisions a pair of giant diffusion plants, in Western Europe and western Canada, producing enough uranium fuel by 1984 to handle the needs of as much as 20 per cent of the world's atomic power plants.

The plan, still in the formative stage, is by no means inflexible, but from the way it's being discussed by United States experts at the fourth Atoms for Peace conference here this week, it appears almost certain that the United States will push for one plant to serve the nations of Western Europe and a second plant to serve the countries of the Pacific Basin such as Australia and Japan.

"We're a long way from selling any of our gas diffusion technology to anybody," an official of the Atomic Energy Commission said here today, "but we're optimistic that discussions will be fruitful once they begin. The trouble right now is getting the negotiations under way."

Negotiations are likely to begin soon with the six Euratom nations: France, West Germany, Italy, Belgium, Luxembourg and the Netherlands. Hard on Euratom's heels will be Japan, Australia, and Canada and Britain. Japan and Australia will likely be a combine, and Canada may turn out to be a third partner to the Japanese-Australian team.

Long opposed by Congress on security grounds, the plan that the United States will push with these 10 nations will be straightforward but tough.

For a royalty, for a share of plant ownership and for a strong say in making sure that no uranium and none of its secrets get lost in the shuffle, the United States will open up for the first time the methods it uses to enrich uranium at Oak Ridge, Tenn., Paducah Ky., and Portsmouth, Ohio.

Some Europeans are frankly skeptical that what the United States has to offer will be attractive enough for Western Europe to pay the price, if only because the U.S. technique of enriching uranium (the gas diffusion process) requires huge quantities of electricity.

"At the current cost of electricity in Europe, a gas diffusion plant of the U.S. type is just not feasible," said Dr. Maarten Bogaardt of the Netherlands. "I think it is not realistic at all to expect that Europe will embrace gas diffusion just because the U.S. is getting ready to open up its technology."

Bogaardt claims that it would cost Western Europe at least $1 billion to construct a gas diffusion plant of the size it will need, and as much as $60 million a year in power costs just to run the plant.

"That's too much," Bogaardt says. "It would never pay to own such a plant. Nobody in Western Europe could raise the money to even build this plant."

U.S. officials say that Bogaardt is talking from ignorance, that when he and his West European colleagues see the blueprints of the American gas diffusion process they will see that it is not as costly as they think.

Whatever it costs, the U.S. gas diffusion process is still the best method available today to enrich uranium so it can be used as a fuel in power reactors. It is twice as cheap as the diffusion process developed by the French, and it is 20 years ahead of the centrifuge process that the Dutch, Germans and British have been developing for the past five years.

"Centrifuge is a very attractive process because it requires low power consumption," one U.S. official confided, "but it is unbelievably difficult to carry off on a large scale. I frankly think the Dutch, Germans and British will still be working to get the bugs out of the centrifuge when the time comes later in this decade for the countries of this world to have their own supplies of enriched uranium."

The United States today enriches uranium for almost all of Western Europe and Japan, but the time is coming when United States domestic needs for uranium fuel will be greater than the total U.S. capacity to produce the fuel. While the United States plans to double its capacity in the next 10 years, it can no longer guarantee its foreign custom-

ers that it will be able to supply all their needs past 1982.

The U.S. plan to share uranium enrichment secrets began as a plan to stop other countries from going into the centrifuge business, because the centrifuge method of making enriched uranium could be concealed from the eyes of inspectors wanting to know how that uranium is being used.

While the United States would still like to see other nations stay out of centrifuge, it has today embraced the sharing plan as a way of winning other countries' cooperation as well as their dollars. The Japanese market alone for enrichment services by 1990 might be as much as $200 million a year, and the European market more than double that.

The tentative plan to win those markets for the United States centers on putting plants in low-cost power regions that would be politically acceptable to all concerned. A European plant might be located in Norway, a Pacific plant in western Canada where hydroelectic costs are still low.

Wherever they're located, such plants could be supplying a fifth of the world market by 1984. By the turn of the century, they could be expanded to take over one-third of the world market or as much as $1 billion worth of business a year.

"We don't want to be stampeded on this," one official of the Atomic Energy Commission said here today, "but we can't afford to drag our feet, either."

UNITED STATES TO BURY WASTES IN KANSAS SALT DEPOSITS

GENEVA, Sept. 8.—The United States plans to bury all highly radioactive waste products 1,000 feet deep in salt deposits under the state of Kansas, the United Nations Atomic for Peace conference was told today.

An official of the U.S. Atomic Energy Commission said that the radioactive wastes that would be produced between now and the year 2000, would fill up about 1,200 acres of the salt deposits near the town of Lyons.

IF THAT'S THE ACROPOLIS, HOW COME IT DON'T CHIME?

HON. WILLIAM L. HUNGATE

OF MISSOURI

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. HUNGATE. Mr. Speaker, at a time when we should be doing more to encourage tourism in the United States, perhaps this article outlining English ingenuity in this field can be of assistance:

IF THAT'S THE ACROPOLIS, HOW COME IT DON'T CHIME?

(By Alan Coren)

"Robert P. McCulloch imports great European architecture for reassembly in new American cities. It was he who got the idea of buying London Bridge and bringing it to the planned community of Lake Havasu City, Arizona. He admits now that he thought he was buying the more picturesque Tower Bridge, but adds: 'That bridge is going to bring in five million tourists a year'." Newsweek.

5TH MAY.

ROBERT P. MCCULLOCH,
MCCULLOCH CORP.,
Los Angeles, Calif.

DEAR MR. MCCULLOCH: Thank you for your wonderful brochure and miraculous unrepeatable offer. Yes, we here at Hogsnout Aerospace Engineering Model Township sure would like to increase our cultural status as mentioned on page 4, and we are over 21. We are a community of forty thousand souls, average family income in excess of $16,000 p.a., and as our town was built during the night of August 10, 1969, we don't have nothing of what you might call hallowed antiquity, always expecting the portrait of my father, Simeon Hogsnout III, painted in 1949 in genuine oils, but this is presently hanging in our boardroom and in consequence not available for our community to enrich its cultural life from. Also, it don't pull in tourists all that good.

Some old European stuff would be just great! My wife and myself went on this $2899 all-inclusive world trip last Fall and we saw a hell of a lot of stuff that would look damn good in the middle of Simeon Hogsnout III Plaza downtown, especially if you have something that would fit in between the Hogsnout Motor Inne and the Simeonburger Parlour and Grill. The area available is about 20,000 sq. ft., with mains drainage and convenient all freeways.

Naturally, I wouldn't want to interfere with no expert authority, but one thing Miriam and me did see was at this Italian place, I guess you'd call it, and they had this old tower, it was leaning over. We went up the top and dropped stuff off like the guide said, on account of they invented gravity up there. This strikes me like a very appropriate cultural thing to have in the middle of the fastest-growing little aerospace industry township in the world!

I know a tower like that would cost approx. $100,000 new, construction industry rates being crazy right now, but this one is extremely secondhand and, like I say, in a very advanced state of lean and God knows about dry rot et cetera, and I reckon I would be doing them a favour taking it off their hands cheap.

I look forward to hearing your esteemed comments.

Yours very truly,

SIMEON HOGSNOUT,
President, Hogsnout Aerospace, Inc.

MAY 18TH.

SIMEON HOGSNOUT IV,
Hogsnout Aerospace Inc.

DEAR MR. HOGSNOUT: Thank you for your letter of May 5. I apologize for the delay in replying, but we have been going through our files of old leaning things in an effort to locate the cultural gem of your choice. There is a lot of stuff like you describe in Europe, but I think what you have in mind is the Leaning Tower of Pisa, and a very wise choice if I might say so, except it will set you back a good five million, if I'm any judge, plus postage and packing. I haven't seen the treasure in question personally, but I guarantee that setting it up in Simeon Hogsnout III Plaza will not only enrich your township but also pull in the hicks, especially if you can get it to lean across the Hogsnout Motor Inne swimming-pool, so's they can maybe dive off it at ten bucks a throw, which has a thick edge over Pisa on account of the cobbles underneath.

I have taken the trouble to enclose a brick of the Leaning Tower, collected by my European sales manager, in the hope it will give you some impression of the quality. A deposit of $50,000 secures.

Yours,

ROBERT P. MCCULLOCH.

24TH SEPTEMBER.

ROBERT P. MCCULLOCH,
McCulloch Corporation,
Los Angeles, Calif.

DEAR MR. MCCULLOCH: Very many thanks for your communication of the 3rd ultimo, also the five truckloads of Leaning Tower of Pisa at $5,000,000, plus ten per cent discount for cash. However, there's one or two things I'd like to enquire about, if you'll excuse me.

I do not pretend to be a leading authority on Europe culture, but we have now unpacked the item and put it up, and it don't seem to be exactly the way I remember it. I could be wrong, but I don't want people should turn up in our community and start being suspicious about our cultural gem, also not shelling out the ten bucks to go up it. Which, as a matter of fact they can't, right now, on account of we got it up all right but when we tried to get it to lean a little, it kind of broke. And when it broke, the top fell off, and when we took a close look at it, this top turned out to be a cement guy with one arm and one eye and a triangular hat. Miriam says she don't remember no guy on the top.

Yours truly,

SIMEON HOGSNOUT.

OCTOBER 3.

SIMEON HOGSNOUT IV,
Hogsnout Aerospace Inc.

DEAR MR. HOGSNOUT: Like I told you originally, I have not inspected this Leaning Tower personally, but I was always under the impression that it had a guy on the top, plus four lions underneath which you will notice I threw in free, gratis and for nothing As these lions alone would normally run out at a minimum of ten grand apiece, I do not understand all the beefing on your part. It is my opinion that the cement guy is Sir Isaac Garibaldi, who invented gravity, like you say. It may be that when you and your lady wife was up the tower on your original trip, you was standing underneath the statue and didn't notice it. No doubt when you finally get the thing in one piece and leaning like it's supposed to, you will recognze it. It's no good looking at a cultural treasure like this in bits, unless it's the Eiffel Coliseum, or something, which is way outside your price range, anyhow.

Yours,

ROBERT P. MCCULLOCH.

OCTOBER 3.

ROBERT P. MCCULLOCH,
McCulloch Corp.,
Los Angeles, Calif.

DEAR MR. MCCULLOCH: Never mind the cracks about my price range, I already had had to pay out another fifty thousand bills to repair this thing which is beginning to cause adverse comment in our community, particularly from Jack Hammell, our foremost used car dealer and a person of some standing, who has been to Europe in both wars and reckons that what I have bought is the British Great Fire Monument, only the big brass ball is missing from the top, rendering it worthless in Jack's opinion, and mine, too, if you want to know. What we appear to have is the cheap part of a Leaning Great Fire Monument, and there ain't nobody going to pay good money to see that, especially as the only way we can get it to lean and stay up is by propping it against the Hogsnout Motor Inne, which has now been condemned as unfit for human habitation on account of it's got this giant thing leaning on it.

However, I do not wish to appear a sore loser. If you will agree to remove this item and replace it with something similar in a nice lightweight plastic, I am prepared to consider the matter closed.

Yours truly,

SIMEON HOGSNOUT IV.

LUXEMBOURG'S FOREIGN MINISTER CALLS FOR INTENSIFIED U.S.-EUROPEAN TALKS

HON. LEE H. HAMILTON

OF INDIANA

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. HAMILTON. Mr. Speaker, under leave to extend my remarks in the

RECORD, I include the following remarks to the U.S. delegation to the Interparliamentary Union Council by Luxembourg's Foreign Minister, Gaston Thorn. His Excellency, in greeting the delegation at a luncheon in Luxembourg, called for intensified talks between the United States and the leaders of the European nations to prevent hasty, unilateral decisions which might jeopardize the interests and beliefs of not only the nations involved, but of the free world.

The Foreign Minister's statement reads as follows:

STATEMENT OF FOREIGN MINISTER THORN

Excellencies, Ladies and Gentlemen, it is one of the minor occupational hazards of being a minister, that every now and then you have to tell yet another distinguished gathering how particularly glad you are to be with them and to be able to share with them a few thoughts, usually carefully homogenized and immunized so as not to upset the digestive processes too much. But when I tell you today how much we have appreciated and enjoyed having you as our guests in Luxembourg, I want you to know that I mean it.

The first reason is that although there are many lunches, there are relatively few where the austerity of professionalism is enlightened of the presence of those who bring a sound of colour, and encharment and gentleness to our lives. I thank you, ladies for being here.

Not so very long ago, when I had the privilege to address the Miami University convocation. I apparently shocked some people when I contrasted the wealth and diversity of the exchanges and links between the two sides of the Atlantic in the cultural, commercial and industrial fields with their near nonexistence on the political level, and I particularly deplored the absence of any meaningful and continuous dialogue between the political decision—and, more important even, opinion makers in Europe and in North America. We may yet cure our problems, dispel the misunderstandings, right the wrongs. I *still* believe there is *no unmanageable crisis yet* in the relations between our two continents. But I cannot help but dream of the better uses to which so much energy and ingenuity could have been put, had we been able through better knowledge and understanding to prevent some of the problems we are facing from rising or at least to defuse them before they become potentially explosive issues.

After all nothing dramatic or even unpredictable has happened over the last 25 years. Europe is still very important for America's security and even more for her forum of civilization. Europe still needs the America commitment, physically vouched for by a credible military presence to help ensure our own safety vis-a-vis the ever encreasing Soviet military capabilities. As the world biggest trading partners we share a common interest in harmonized, stable and free commercial and industrial exchanges. More admittedly in the economic than in the political and defence fields Europe has been shaping up to play its role of equal partner. And I would like to stress again that developments in this sphere ever since the war have constantly reflected the official IS policy, that what has been achieved, including the enlargement of the Communities, has had the encouragement and backing of your Government. And so the flow of investments across the Atlantic is huge and profitable, cultural exchanges and tourism are varied and generous traditional diplomatic links are excellent and amicable. And yet, recently a tendency seems to grow to become impatient with one another and irritable. Unilateral action is threatened and even now sometimes taken as if in despair over the possibility of concerted and common action growing out of our shared interests and beliefs. NATO, the Global Tariff Agreement of 1967, and now the Berlin Agreement, hopefully soon to be completed, show what we can achieve when we work together and in harmony. Wider negotiations are in store. We are together preparing for meaningful negotiations on mutual and balanced force reduction, on the wider issues of European security that will make detente a safe and stable reality not just a dangerous sell out. Now that enlargement is well under way, the Communities will be able to gear up to a general review of their relations with the rest of world, foremost with America. Would it not be folly to put it all in jeopardy because we also experience a number of no doubt delicate and complex, but by no means unmanageable problems such as one ought to expect to arise in the highly sophisticated relationship between the world's biggest trading partners with all the political connotations such as a relationship implies? Would it not be a tragedy if, so close to our mutually agreed goal of equal partnership, hasty unilateral decisions and action were to ruin the basis of generous confidence and patience on which so much has already been built.

This confidence, this patience can only be nurtured by constant communication at all levels—including the political. And that is, Ladies and Gentlemen, why I so much welcome your presence here today. That is also why I hope your visit is not just a late summer spree of political tourism, but the beginning of a period of intensified meetings and get togethers of political leaders on both sides of the Atlantic, so that there may be sympathy in the true sense of the word where it matters most: where policies are conceived, options defined, decisions prepared and taken.

I feel confident that we will be able yet to find common solutions to our common problems, and to this hope, to this faith I raise my glass.

BOTH WORKERS, MANAGEMENT EMBARK ON NEW POSTAL ERA

HON. THADDEUS J. DULSKI

OF NEW YORK

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. DULSKI. Mr. Speaker, the revolutionary Postal Reform Act of 1970, which came into full operation July 1, already has resulted in major changes affecting both management and labor.

There has been considerable attention given to the changes in management and procedures. But what of changes to date affecting postal workers?

For more than 50 years the development of craft organization in the postal service created a pattern involving a dozen or more separate unions looking after the specialized concerns of their members.

That era now rapidly is ending.

On July 1, 1971, for example—the very same day that the U.S. Postal Service supplanted the Post Office Department as a quasi-corporate institution—five of the major postal unions formally merged into a single new organization called the American Postal Workers Union with a new charter from the AFL–CIO.

The APWU, as it is usually identified, brought together more than 300,000 members—the largest postal union in the world.

MONTHS, YEARS OF EFFORT

This, of course, did not happen overnight. The giant merger represented months and even years of effort on the part of farsighted union leaders in persuading their respective members to bury old jealousies and deep-seated rivalries for the common good.

How well they succeeded can be measured by the results of a referendum election earlier this year within the five unions which ratified not only the concept of merger but also the constitution and bylaws of the new organization drafted earlier by individual merger committees.

Nearly 96 percent of those voting favored the merger. The total vote was 152,460 to 6,453. The near-unanimity of the rank and file was a pleasant surprise to even the most optimistic observers.

FIVE UNIONS JOINED

The American Postal Workers Union, AFL–CIO, is composed of the memberships of these former unions:

The United Federation of Postal Clerks, the largest of the groups involved, which held national exclusive representation rights in the clerk craft.

The National Postal Union, created in 1958 by dissident elements of the UFPC in a breakaway action.

The National Association of Post Office & General Service Maintenance Employees.

The National Federation of Post Office Motor Vehicle Employees.

The National Association of Special Delivery Messengers.

All but the National Postal Union were affiliates of the AFL–CIO.

The new general president of the APWU is Francis S. Filbey, formerly president of the United Federation of Postal Clerks. Second in command is General Executive Vice President David Silvergleid, formerly president of the National Postal Union.

The former presidents of the other three unions continue to serve as presidents of their respective craft divisions within the new union.

They are Monroe C. Crable of the Post Office and General Service Maintenance Employes; Chester W. Parrish of the Post Office Motor Vehicle Employees; and Michael J. Cullen of the Special Delivery Messengers.

HEADS CLERK CRAFT UNIT

In addition, the new National Executive Board of the APWU selected Philip E. Dooley as president of the clerk craft division.

Of special interest to us on Capitol Hill is the leadership of the APWU Legislative Department by Patrick J. Nilan who held the same position in the United Federation of Postal Clerks. Edward L. Bowley, legislative director of the former National Postal Union, has joined the APWU legislative staff as legislative aide.

The new union is headquartered in the five-story structure at 817 14th St. NW., here in Washington, which formerly housed the United Federation of Postal Clerks.

The emergence of the APWU simultaneously with the U.S. Postal Service would in itself be a matter of the utmost significance in terms of labor-manage-

ment relations in the postal service. But the story does not end there.

Formal negotiations looking toward an additional major merger have now started between the American Postal Workers Union and the National Association of Letter Carriers, AFL–CIO, headed by President James L. Rademacher.

FURTHER MERGER SOUGHT

Merger committees, including both top officers and rank-and-file members from each organization, already are actively engaged in the search for acceptable merger conditions. Both unions report progress is satisfactory.

Should the APWU and the NALC find common ground, most of the 600,000 employees of the postal service ultimately will be joined together in one big union. They already have demonstrated their ability to work together.

Last September four of the five unions now merged into the APWU, plus the Letter Carriers Union, the unaffiliated Rural Letter Carriers Union, and the Mail Handlers' Division of Laborers International formed the Council of American Postal Employees—CAPE. This is as an ad hoc body to conduct the first contract negotiations with the Post Office Department, which resulted in the existing contract signed on July 20, last.

CAPE continues to function as an umbrella organization for these unions in their continuing negotiations with the postal service on items not resolved in the original contract.

Both workers and management—indeed and also the Congress and the general public—are watching closely the progress of postal reform. Changes are both necessary and inevitable to meet the challenges of today and tomorrow.

RADIO LIBERTY AGAIN SHOWS THAT IT MUST BE SAVED

HON. ROBERT H. STEELE

OF CONNECTICUT

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. STEELE. Mr. Speaker, on Thursday, June 24, 1971, I joined my distinguished colleague from New York (Mr. REID) in sponsoring of H.R. 9330, a bill to provide for the creation of an American Council for Private International Communications, Inc., as a funding and management mechanism to guarantee the future of Radio Liberty and Radio Free Europe. I believe that the unique value of Radio Liberty was highlighted again this weekend by the key role it played in reporting the death of former Soviet Premier Nikita Khrushchev to the people of the U.S.S.R.

Failure of Soviet news media to report the death of Nikita Khrushchev until many hours after it took place gives us a timely reminder of the way in which Soviet citizens are systematically deprived of information. It also reminds us of the important role of Radio Liberty in keeping Soviet listeners abreast of their country's internal developments.

I received today the following report on Radio Liberty coverage. I believe it offers a dramatic illustration of the station's effectiveness.

From Saturday afternoon, when the first unofficial word reached the West that Khrushchev was dead, until Monday morning, when the Soviet press carried a brief item, the people of the Soviet Union heard nothing from their own media about the passing of a man who had run their country for a decade, and who had stood out as one of the most colorful and influential men of his time.

Listeners to Radio Liberty were, however, fully informed. A news flash was carried in the Russian program on Saturday at 4:37 p.m. Moscow time, followed by fuller news items about the circumstances of his death, word of the Monday funeral, and reactions of world leaders. Varying treatment of the event by media in other Communist countries was reported. Broadcasts in Radio Liberty's 17 other languages followed suit.

I believe the most politically significant part of Radio Liberty coverage is the fact that the station has begun to rebroadcast—in daily half-hour installments—the full text of Khrushchev's famous "Secret Speech" of 1956 in which he tore Stalin from his pedestal; this is particularly timely now the forces of re-Stalinization are at work in the U.S.S.R.

Soviet citizens, to whom Khrushchev has become a virtual "nonperson" during the past 7 years, will be able to hear recorded excerpts—in the late Premier's own force—of his speeches and press conferences, thanks to Radio Liberty broadcasts.

Since the Soviet authorities constantly attempt, with varying success, to jam Radio Liberty's broadcasts, the station will continue to devote considerable time to programs about Khrushchev, repeating them as required, for some time to come. The editorial desk's broadcasting in the country's minority languages are, in addition, carrying special programs devoted to Khrushchev's activities in policies toward their own areas—the Ukraine, where he was boss in his early career, the Turkic areas of Soviet Central Asia—scene of Khrushchev's famous "Virgin Lands Campaign"—and in the Caucasian republics.

It is clear that, by filling in such deliberate gaps in the Soviet citizen's knowledge of his past and present, Radio Liberty is making a significant contribution toward the country's healthy evolution and its emergence as a responsible, peaceable neighbor in the world community.

SPEAKER ALBERT'S KENTUCKY ANCESTRY

HON. FRANK A. STUBBLEFIELD

OF KENTUCKY

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. STUBBLEFIELD. Mr. Speaker, the Green River Republican of Morgantown, Butler County, Ky., published in its issue of August 12, 1971, a letter from Maurice H. Thatcher telling something of the Kentucky ancestry of yourself in which your Kentucky ancestry is depicted.

The letter sets forth the fact that you have a Kentucky ancestry because your great, great, great grandfather was Jacob Albert, son of Simon Albert, whose descendants went from Butler County to Illinois and thence to Oklahoma.

As I understand, the Albert family went from western Pennsylvania to Kentucky. In Pennsylvania, the Alberts were a part of the so-called Dutch settlers—in fact German.

Former Congressman Maurice Hudson Thatcher, of the Louisville district, was reared in Butler County, though afterwards he went to Louisville and practiced law there, excluding his tenure in the Canal Zone, where he served as a member of the Isthmian Canal Commission and Civil Governor—1910–13; until he came to Congress in 1923, from the Louisville district, to serve five terms. He reached his 101st milestone on August 15, 1971, and is now the oldest surviving member of Congress. He is now domiciled in Washington, D.C., where he is yet active in various public welfare activities. He has always been very loyal to Butler County and its people and is grateful for every opportunity to serve them and to broaden its historic background.

Butler County is in my district, and I am glad to have its people as my constituents. It has a fine and patriotic history.

The indicated letter, Mr. Speaker, is both interesting and informative. I am including it as a part of these remarks:

CONGRESSMAN CARL ALBERT'S FAMILY ORIGINALLY CAME FROM BUTLER

MY DEAR MR. EDITOR: Your readers may be interested to learn that Congressman Carl Bert Albert of Oklahoma was elected last January as speaker of the present 92d Congress of the U.S., and whose great, great, great grandfather was Jacob Albert, son of Simon Albert, whose descendants went from Butler County to Illinois and ultimately to Oklahoma where the Albert family has since resided.

Speaker Albert, in a recent conversation with me, advised me that the triple great grandparent was a native of the section of Butler County when it was a part of Logan County, and that when Butler County was formed and detached from Logan County, he continued to reside in the Butler County area.

The Speaker is grateful for his genealogical relationship to Butler County, and I am sure that in turn Butler County is grateful for this link with the Speaker of the House.

The Speaker has been very successful in his public career and through his energy, pleasing personality and all-around ability has achieved election to the highest honor in the House of Representatives; and is discharging his duties as such with distinction.

He represents the Third Congressional District of Oklahoma and his home is McAlester, and the Congressional Directory of the 92nd Congress carries this brief sketch of his biography, which is now given.

Third District——Counties: Atoka, Bryan, Carter, Choctaw, Coal, Cotton, Garvin, Haskell, Hughes, Jefferson, Johnston, Latimer, Le Flore, Love, McCurtain, Marshall, Murray, Pittsburg, Pontotoc, Pushmataha, Seminole, Stephens (22 counties). Population (1960) 396,161; (1970), 393,233.

Carl Bert Albert, Democrat, of McAlester, Okla.; born in McAlester on May 10, 1908;

oldest of five children of Ernest Homer and Leona Ann (Scott) Abert; University of Oklahoma, B. A., B.C.L.; Oklahoma City University, B. A., B.C.L.; Oklahoma City University, LL.D. (honorary) board of trustees, Southern Methodist University; Oklahoma Hall of Fame; World War II service; lawyer; married Mary Harmon of Columbia, S.C., daughter of David Henry and Mary Isabelle (Strange) Harmon; two children, Mary Frances and David Ernest; elected to 80th and succeeding Congresses; Democratic Whip, 84th, 85th, 86th, and first session 87th Congresses; Majority Leader, second session 87th, 88th, 89th, 90th and 91st Congresses; elected Speaker, 92nd Congress, 1st Session.

If this letter is reproduced in your column, I would be grateful to receive an extra copy of the Green River Republican to be given to Speaker Albert, and it most likely will be published in the Congressional Record.

Butler County has contributed in a substantial manner to the settlement of Oklahoma. Congressman and Senator from Oklahoma was John William Harreld, also Everett B. Howard, Congressman of the Tulsa District. It came to pass that Harreld, Howard, the writer and John W. Moore (of the Morgantown district) finally met under the dome of the Capitol of the U.S. in their respective capacities, and all were young men together in Morgantown. My own district, of course, was Louisville and Jefferson County.

With best wishes, I remain,

Sincerely,

M. H. THATCHER.

SALUTE TO PATRICK J. MANGAN, JR.

HON. JACK F. KEMP

OF NEW YORK

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. KEMP. Mr. Speaker, although Congress was in recess, August 10 was a red letter day for the Fire Research and Safety Act as the President signed the 1972 appropriation bill providing $300,000 for the operation of the National Fire Commission. On May 25, 1971, the President had previously signed a supplemental appropriation bill for fiscal year 1971 which included $50,000 to get things off the ground in the area of fire research and safety. A lease has already been signed for 1,500 square feet of office space located within two blocks of the Firefighters International office here in Washington.

This Commission will become a powerful weapon in the fight to publicize the problems in the struggle against fire. The Wall Street Journal is just one of several major publications that have been lately focusing public attention on the plight of the Nation's firefighters who must not only fight fires but rocks and sticks and verbal abuse. At the end of my remarks I shall include the article.

Mr. Speaker, some cities are also fortunate to have outstanding leaders among their firefighters who do much to promote a better understanding in the community of the hazards of firefighting. One such man is Pat Mangan of Buffalo.

Pat has been a Buffalo firefighter for 19 years and is presently president of the Buffalo Professional Firefighters Association, Inc. He is also president of local No. 282, International Association of Firefighters, AFL–CIO. Pat also finds time to serve on the executive board of both the Buffalo Port Council and the maritime trades department of the AFL–CIO. In addition, he is the international representative for the International Association of Firefighters.

Mr. Speaker, Buffalo just dedicated a new $800,000 Erie County Fire Training Center. I am sure my good friend Pat Mangan is very pleased that technology now exists for, or is nearly available, that can materially improve the efficiency of fire suppression and prevention forces in Erie County.

Pat has always been one to be concerned about his men and his community. In addition to his firefighting, he has found time to be active in the following:

American Arbitration Association.

Christian Firefighters Guild of the United States and Canada.

Western New York Industrial Relations Research Association.

Capitol Hill Club.

Knights of Columbus, 3d degree.

Rutgers Labor Alumni Association.

Member Honorable Order of Kentucky Colonels.

St. Joseph Labor Guild.

New York State Supreme Court Uniformed Officers Association.

Honorary Attorney General, State of Louisiana.

Appointed to Erie County, N.Y., Sesquicentennial Committee, 1971.

AMVETS—Post No. 68.

Mr. Speaker, we are indeed fortunate to have Pat Mangan in Buffalo. At this point I include the article from the June 6, 1971, issue of the Wall Street Journal:

SMOLDERING DISPUTE: FIRE FIGHTERS' MILITANCY GROWS AS THEY PROTEST INCREASED HARASSMENT—FALSE ALARMS, ROCK THROWING IRK FIREMEN; THEY BOOST PAY DEMANDS; SOME STRIKE—"THERE'S NO TIME FOR PINOCHLE"

(By Elliott Carlson)

BALTIMORE.—Sweaty and tired, fireman Ronald Baker hoists himself into the big rig as it pulls away from the still-smoldering house. It was a routine blaze, easily put out. But for Mr. Baker and the men of Engine Co. 58 there were other perils. On their way into the old darkened slum building some men narrowly escaped injury when they stumbled in a thinly covered hole in the floor. Nearby a band of youths, watched by police, stood snickering.

"We've become a form of recreation for these people," growls Mr. Baker, a 22-year-old rookie fireman. Like many veterans here, he believes such fires often are deliberately set in abandoned booby-trapped houses just to harass white fire fighters. These firemen complain that stonings, verbal abuse, nuisance fires and false alarms have become nearly commonplace in many predominantly black slum areas.

As a result, the city's firemen are becoming militant and demanding greater rewards for the mounting hazards they say go with the job. Last month the Baltimore local of the International Association of Fire Fighters (IAFF) broke off wage talks with city bargainers, who were offering firemen a 2½% annual pay increase. Deriding the offer as paltry, the IAFF local put pickets around city hall and warned of tougher measures unless the city sweetens its terms by next Wednesday, when the current contract expires. Today the union plans to surround city hall with more than 500 pickets.

Fireman Baker grumbles: "What they're paying us simply isn't enough for what we have to put up with."

PUTTING PRESSURE ON CITIES

Firemen in many other cities feel much the same way. And increasingly they are showing their discontent. New York firemen, recently showered with rocks and bottles from ghetto dwellers, have threatened to cut off service to certain neighborhoods unless they have police protection. Responding to such complaints, Senate Judiciary Committee Chairman James Eastland of Mississippi has proposed making it a federal crime to assault a policeman or a fireman. But mostly fire fighters, like teachers and many other public employes, are demanding that city governments bargain with them—and grant generous pay raises.

Firemen increasingly are turning for help to the 53-year-old IAFF, for years little more than a social club for aging captains and small-town firemen. But with members in a rebellious mood, the union in 1968 began switching more power to big-city locals, removed the "no-strike" clause from its constitution and voted out some older vice presidents. It also elected a new president, W. Howard ("Howie") McClennan, a veteran Boston hoseman and a man who now, even at 63, projects a militancy that appeals to young rank-and-filers.

Aided by laws in 31 states that extend firemen some form of bargaining power, the IAFF is organizing more and more fire departments. The union's U.S. membership has risen to 138,000 from 115,000 three years ago. As a result, it now represents an unusually high 75% of its potential jurisdiction and ranks sixth in size among public-employe unions.

THE PROPERTY OF THE STRIKE

The IAFF's militancy is raising vexing questions. Among them: Are such unions acquiring too much leverage over financially strapped city governments? And, more important, is the strike a proper weapon for firemen? Nearly all states forbid such tactics by law, but since 1968 firemen have staged at least 16 illegal strikes, the longest a 14-day walkout last year in Sacramento.

New crises loom now. Fire fighters in Flint, Mich., have authorized a strike, and union men say there's no telling how long the men can be held in check. This year there have been a wildcat "sick-in" in Schenectady, N.Y., and strike threats in Milwaukee and Youngstown and Columbus, Ohio. And in March New York firemen staged a work slowdown before getting an offer of a 12% pay rise to $14,180 annually after three years. The firemen, however, turned down the offer and are still negotiating.

Behind such wrangles is a bundle of frustrations, union men say. Mostly, firemen feel underpaid for their long hours (nationally, firemen average about $8,060 annually for what is usually a 55-hour workweek). They also complain that in many cities they are losing their historic bid to keep wage parity with police. And, finally, they complain that the job is getting more perilous. (In 1969 fire fighting edged out mining as the most dangerous occupation, measured in terms of deaths per 100,000 workers; police work ranked fifth.)

ENTER THE NEW BREED

Making things even more volatile is a new breed of fire fighter. "Back in the old days the men were content to have a pension and job security," recalls Mr. McClennan, a heavyset, plainspoken man and the first private ever to achieve the IAFF presidency. "But pensions don't have the glamor any more. Today's fire fighter wants part of the action." He means more cash now.

Typical of the new breed is Baltimore fireman Baker, an eight-month rookie who has been doing some of the picketing. "We just don't like risking our lives for meager wages," grouses Mr. Baker, a slight, dark-haired youth

who always wanted to be a fireman. The problem, he says, isn't just his $7,880 starting salary or the traditional dangers that go with the job; now there's harassment as well.

"It gets awfully discouraging when they keep calling you out on false alarms to the same old areas," he complains. "The people just stare as you go by, and you know they did it, but you can't prove it. We've also had fires where people threw aerosol cans into the flames so they could go off in fire fighters' faces."

What's more, firemen contend, the job belies the popular image of men playing cards and sleeping. Little loafing occurs at Engine Co. 58, where the men alternate between 10-hour day shifts and 14-hour night shifts in a 48-hour week. When they aren't fighting fires, the men spend their time drilling, inspecting buildings for fire hazards, maintaining equipment and scrubbing the aging, 48-year-old firehouse.

"People think we play pinochle, but we have no time for that," one fireman says.

AFTER DARK, THERE'S TROUBLE

The trouble comes after dark, and riding with Engine Co. 58 even during a routine night leaves a vivid impression of the problems. The 14-hour stint is marked by only six calls; four fires in large outside trash bins, a false alarm at 3:12 a.m. and a trash fire in an auto junkyard at 5:28 a.m. When the alarm sounds, the firehouse lights flash on automatically, and the men groggily slide down the poles (an art form considered too tricky for visitors). They are still buttoning their shirts as the truck highballs around corners and down narrow side streets. A false alarm leaves a bitter aftertaste.

On this night no violence occurs. Still, a visitor senses the tension at several fires as teenagers mill around the apparatus. One evening recently the same crew was pelted with rocks and bottles as the truck backed down a deadend alley to put out a minor trash fire. No one was seriously injured, although the driver, Thomas Patke, was hit on the arm with a baseball bat. (The men have kept the bat as a souvenir and show it off to visitors.) The company's new $35,000 truck bears the scars of several skirmishes.

Despite such woes, few men at Engine Co. 58 favor striking, although they concede that sentiment for more drastic action is growing. At its headquarters in Washington, the IAFF has only limited means to influence local tactics. With little real control over the 1,800 locals, the national leadership derives its power strictly from its ability to provide some financial help, bargaining data and know-how. The IAFF also lacks a strike fund. "We're reluctant to encourage strikes," says Raymond Perry, IAFF's director of services. "We're not equipped to help the guys like the big unions."

BIDS FOR COMMUNITY BACKING

Yet once a strike occurs, the union usually rushes in all the help it can. Vice presidents, public relations people and sometimes even Mr. McClennan himself converge on the city in hopes of mustering community support, keeping rank-and-filers unified and, if possible, getting bargainers back to the table.

Such tactics occasionally pay off. In Madison, Wis., firemen in 1969 won a 17% pay increase to $8,736 after a four-day strike. More frequently, strikes have ended inconclusively or even disastrously. Two years ago the 70 firemen of Rapid City, S.D., went on strike and as a gesture of protest, offered their resignations. Only a few ever got their jobs back.

Another case in point is Sacramento, where 418 fire fighters last fall walked off their jobs. They returned two weeks later after Gov. Ronald Reagan ordered 140 employes of the State Division of Forestry to man the fire stations and a state supreme court judge found the strike illegal. Not only did the strikers fail to win a pay rise, but, according to the IAFF, a dozen firemen were demoted in rank.

Critics charge that strikes and strike threats have marred the historically benign image of the firemen—and have seriously complicated the running of the fire departments and even of city governments.

"It's very difficult to manage a fire department with all this militancy," grumbles Fire Chief Leonard Bell of San Diego, the scene of a bitter three-day strike last year. "The local wants a say in everything, like where a man works and a number of things that should be up to the chief."

HOW MUCH CAN THE CITIES PAY?

A second problem is when "the union makes end-runs around municipal bargainers to the electorate," without regard to cities' ability to pay, says a spokesman for the International City Management Association. He cites St. Louis, where in a special election last year firemen won voter approval for wages matching police pay. The city government is fighting the election outcome in court.

To improve firemen's relations with blacks and others, the IAFF has tried a number of approaches. Among them was adoption of the slogan, "fire fighters fight fires, not people." But after being plastered on billboards and auto bumpers around the country, the slogan was dropped this year. Police departments had complained that the slogan implied police, unlike firemen, fought people.

Also firemen in Dayton, Ohio, and Washington established "community referral centers" in predominantly black neighborhoods. The centers were manned by firemen trained to direct people in trouble to the city or private agency best able to provide help. Dayton's center is still operating, but Washington firemen abruptly terminated theirs last year after contending they were still being harassed.

Arguing that fire departments have lagged in hiring blacks, civil rights groups blame the union for failing to spur recruiting of Negro firemen. No current statistics exist on how many of the country's firemen are black (in 1960, according to census data, 97.5% of U.S. firemen were white). The IAFF says it is trying to do something about the problem. Recently the union asked the Labor Department for a $440,886 grant to finance a 12-city pilot program aimed at preparing up to 1,200 minority-group members for firemen's examinations.

Black firemen say their relations with whites are especially sensitive because fire fighting is among the few occupations in which fellow workers sleep in the same room. "This makes some whites very nervous," says Samuel Golden, a Negro in the Oakland, Calif., fire department. "A few really believe that blacks are going to pull out knives and stab them during the night."

PRESIDENTIAL COURAGE NEEDED

HON. BENJAMIN S. ROSENTHAL

OF NEW YORK

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. ROSENTHAL. Mr. Speaker, the measure of a nation, like that of a man, can be found in the ability to concede error, accept the consequences and proceed constructively from there. No amount of vengeful seething or pitiful brooding can substitute for the real courage needed to recognize a difficult situation and work to rectify it.

Our Nation is currently entrenched in such a difficult period. The war in Southeast Asia has torn our spirit and strained our muscle. We need more than rhetorical promises to restore our faith, and more than vain hopes to reclaim our national pride. We need strong and courageous national leadership to rescue us from the muddy roads of war and place us back onto the highway of peace and prosperity.

We need, as Robert Shnayerson writes in the September 1971 issue of Harper's magazine, an "American President brave enough to lose a war for the sake of a greater national victory." The greater victory of saving human lives and national moral character. It is a victory that all Americans can derive pride and strength from.

I insert into the RECORD at this point the following article from the current Harper's by Mr. Shnayerson, the new editor in chief of that prestigious journal:

SIGNS OF LIFE—WANTED: THE FIRST PRESIDENT BRAVE ENOUGH TO LOSE A WAR

(By Robert Shnayerson)

According to the Madison Avenue sages, the last thing I should be writing about these days is Vietnam. Americans, I'm told, are sick of the subject and an editor is well advised to avoid it. It just doesn't sell magazines. Well, I'm fed up too, really fed up. Which is why I can't help wishing in print that somebody official would give us a decent answer to a simple question: why are we in Vietnam—still in Vietnam?

It's not that I don't believe we're withdrawing, but the process does seem to be taking far too long. So long, in fact, that I have begun to nourish a small theory. It is that much of our agony in Vietnam derives from a single unfortunate maxim: "I am not going to be the first American President to lose a war."

Truman, Eisenhower, Kennedy, Johnson, Nixon—all five Presidents in the past two decades have repeatedly uttered the same or similar words to justify their miscalculations in Indochina. It makes you wonder how often supposedly rational policies are really based on emotions. In this case, a slogan represents the unthinkable, a Presidential refusal to concede that America can ever be defeated by any nation on earth—and surely not by a third-rate Asian Communist power.

The attitude is understandable. No leader in history, including the pacifist Nehru, has ever willingly presided over his country's defeat in war. That way lies personal shame, political oblivion, perhaps execution. No, we cherish implacable Churchills and despise appeasing Chamberlains. We abhor even those pragmatists (sometimes called traitors) who claim to save a defeated people by collaborating with the victor; history reserves a special contempt for men like Laval, Pétain, Kadar, and their ilk. Such is national pride, the modern form of tribalism, that most of the world honors glorious defeat rather than inglorious surrender, even if a nation is destroyed in the process.

Nonetheless, I like to think that most of us have begun to put aside such primitive feelings, especially in the era of the H-bomb. It may even be time to heed a competing tradition, common among certain weak countries that know the delicate art of surviving in the shadow of powerful neighbors. The practical-minded Thais, for example, have thrived for centuries by flattering the world's winners rather than fighting them. When the winds of power shift, the Thais merely smile in a new direction. Another point to ponder is that some winners who become losers tend to outgrow jingoism and even benefit by losing. The argument

can be carried too far, of course, because utter defeat can be so embittering as to arouse a ghastly yearning for national revenge. But if a losing country is not badly frustrated, if it rises from the ashes with renewed hope, defeat may conceivably be therapeutic. It might even be said that every people needs at least one defeat—together with leaders who understand the uses of tragedy—in order to find a revived sense of common purpose.

All this is by way of noting the obvious, that America only now confronts a dismal experience that most other nations have suffered several or many times in the past. Until recently, we viewed ourselves as permanently undefeated, the only country that took its victories for granted as a virtual law of history. Thus five Presidents have recoiled from any hint of cowardice in Vietnam; they have insisted, moreover, that our involvement is a profound test of our credibility as a nation, of our willingness to help other American allies in their resistance against Communist aggressors. We're a chosen people, the self-elected guardians of all the globe's dominoes. Or so say our Presidents.

Not many of us would disagree with this in principle; culturally we are trained to come running in emergencies ("Lafayette, we are here!"), and we hate to lose at anything, whether in war, business, sports, or love. America *is* competition. Still, we do have another aspect to our character: a willingness to "cut your losses," close unprofitable branches, head for a new frontier, start over at something more profitable. "There are no second acts in American lives," insisted Scott Fitzgerald. But he was wrong: nothing so marks this country as our urge for self-renewal.

Unlike the Thais, of course, we don't smile beningly at anyone who attacks our country. But when it comes to foreign entanglements, in Washington's phrase, our patience is clearly not limitless. More than we are given credit for these days, we are still a people able to distinguish between the workable and the unworkable, between true challenges and deluded follies. In this sense, it would seem that all those Presidents have suffered a certain cultural lag, a misreading of our limits. Isolated from the rest of us by virtue of their enormous responsibilities, they have understood power but not people, whether Americans or Vietnamese. Imprisoned in their own concerns, unable to share them frankly with us, they have tended to become emotionally tone-deaf—a failing oddly common to many politicians, including several of those preening Democratic doves now posturing toward the White House.

Meantime, we have Richard Nixon, an earnest leader with global visions, who somehow so lacks the human touch that he often appears to have stopped trying to acquire it. What does come through is the President's deep concern about "defeat," which at least suggests that he is worried about something we can discuss—his place in history. The need for plain talk is obvious. Unless Nixon feels widely supported in his efforts to end the war, unless he feels truly released from the old Presidential imperative, our Vietnam involvement may be longer and bloodier than most Americans expect.

The trouble is, of course, that this President is an intensely private man who tends to speak only to certain people he trusts, and he does not trust many. Even if we only wanted to express our sympathy, which he surely deserves, the odds against our getting in to see him seem pretty astronomical. I feel so dubious about it, in fact, that I propose we voters settle for a strictly imaginary conversation with Nixon. It might go like this:

VOTERS (after appropriate salutations, obeisances, etc.). Mr. Nixon, if we can speak hypothetically and in total candor, what do you think would happen to the first American President to "lose" a war?

NIXON (slightly paling). Are you sure this is strictly off the record?

VOTERS. Absolutely.

NIXON. No attribution? Not even to a "high Administration official"?

VOTERS (with more obeisances, etc.). We wouldn't dare tell anyone what the President thinks.

NIXON. Security, you know. It's bigger than any of us.

VOTERS. Sir, we understand you completely.

NIXON. In that case, let me make one thing perfectly clear: you've asked a fascinating question. In fact, it's just the one I sit here pondering while Haldeman guards the door. Now, if you're talking about me . . .

VOTERS. Only hypothetically.

NIXON. . . . then I'm afraid the answer is that Nixon would be a one-term President, and this country would languish under twenty more years of Democrat administrations.

VOTERS. But doesn't the answer really depend on how we ourselves define "loss"? For example, if we quit the war tomorrow and insist we've won it, how can we feel anything but victorious?

NIXON (smiling, as if upon schoolchildren). According to Senator Aiken's quaint theory, that's what both sides ought to do. And don't think I haven't tried hard to head in that direction. Unfortunately, the enemy won't cooperate. He keeps fighting. And any time our people see either of two things—American boys retreating or an ally falling to the Communists—well, I can't imagine the people using any other word for those events but "loss," or worse, "defeat." Sheer defeat.

VOTERS. Frankly, we thought our boys were already retreating by your orders. And beyond a few generals and so forth, we haven't heard many Americans complaining about it.

NIXON (stiffly). My orders have nothing to do with retreat. They call for an orderly disengagement consistent with the Republic of South Vietnam's soaring capacity to defend itself from Communist aggression. Prudent disengagement is proceeding very rapidly. And I warn any other Presidential candidate that, by next year, our commitment will be curtailed to an all-professional force of about 50,000 men, perhaps half that. By Election Day, Vietnam simply won't be an issue.

VOTERS. Mr. President, we read the newspapers . . .

NIXON. Ugh.

VOTERS. . . . but we'd like to pass over all the speculation about the various contingencies that might delay your schedule.

NIXON. Thank God.

VOTERS. How seriously do you take this losing-another-ally-to-Communism problem?

NIXON (gesturing with his hands). Very seriously. If we let Vietnam go down the drain without doing *something*, then I fear a new isolationism, a disregard for our responsibilities as a great power that will ultimately endanger world peace.

VOTERS. But won't Americans become more isolationist the longer we stay in Vietnam, the more we become disillusioned?

NIXON. That's why I'm pulling out as fast as possible, but I refuse to let our South Vietnamese friends be massacred.

VOTERS. We couldn't agree more—assuming we have that many friends left. But how do we protect them?

NIXON. Very delicate negotiations on that point are going on right now in Paris and other places. I just can't comment.

VOTERS. Would you trust Communist assurances?

NIXON. Not if I can help it.

VOTERS. Maybe the real point is that mass reprisals will hurt only the Communists. Even Communists can't afford to alienate a whole country if they hope to govern it.

NIXON. You're assuming they'll get that chance.

VOTERS. Don't you?

NIXON (irritably). I'm sick and tired of idle speculation. I have a program to guarantee South Vietnam's independence. I know it's working.

VOTERS. Forgive us, but we may never have another chance like this to ask you questions. For example, do you still believe in the domino theory, the notion that a North Vietnamese victory in the South would send the Communists into nearby countries?

NIXON. Since this is off the record, I don't mind saying that North Vietnam is a shattered country and its postwar energies are likely to be focused on rebuilding, not conquest.

VOTERS. Doesn't that undercut one of the chief arguments used to get us into Vietnam in the first place?

NIXON. Only if you assume, which I don't, that the North had no aggressive ambitions before we shattered it.

VOTERS. Quite a few people in Asia and elsewhere seem to think that we were the aggressors, not the North Vietnamese.

NIXON (more irritably). Sheer twaddle. That's the "war criminal" argument, and I simply won't go into it. If you really care about world peace, what we really should discuss is how our Vietnam performance is likely to affect countries elsewhere. Are we still believable as an ally? If not, will a lot more countries, friendly as well as unfriendly, plunge into nuclear proliferation because it's now relatively easy and they think they have to? Tell me, if you were Golda Meir, and you thought America no longer had the nerve to help Israel in a crisis, would you start building H-bombs?

VOTERS. We would rephrase your question. If we thought America was foolish enough to continue wasting its resources on a war not in its national interests, would we start building those bombs? Answer: Yes, because we could no longer count on America's power, to say nothing of its reason.

NIXON. In other words, you think staying in Vietnam actually weakens our credibility?

VOTERS. Yes.

NIXON (serenely). You simply don't understand *realpolitik*. That's a word Kissinger will be glad to translate.

VOTERS. Frankly, Mr. President, you haven't given us many very good reasons for hanging on in Vietnam much beyond next month. We have to say this, but we tend to think you're mainly worried about domestic politics.

NIXON. You're overlooking the fate of seventeen million South Vietnamese we're sworn to protect, though I grant you that most of them only want peace, no matter which side provides it. Beyond that, you're substantially right. I concede I'm in political trouble.

VOTERS. We'd like to be as honest as you're being. We don't think you're in all that much trouble, at least not on the losing-a-war issue.

NIXON. How so?

VOTERS. According to a recent Gallup Poll, only 36 per cent of Americans still want to go on fighting long enough to preclude a Communist takeover. That's a drop from 62 per cent in 1968. In fact, a clear majority (55 per cent) want to get out now, even though that leaves South Vietnam to the Communists.

NIXON. I saw that poll too, and it certainly did seem to give me a free throw on the "defeat" issue. But read it more closely. The trouble is that most of the antiwar majority consists of chronically anti-Nixon voters. They're mostly young or black or Easterners who don't trust Nixon in any situation. That leaves me with the hawks, who worry about defeat and could switch to someone like Reagan. Meantime, I've got

to think about the economy. That's the real issue in '72.

VOTERS. No one has to tell *us* that. If the economy doesn't improve, you've really had it. Which is precisely why we came here to talk about the war: why don't you quit Vietnam and galvanize the country in your favor?

NIXON (hopefully). Tell me more.

VOTERS. To be blunt, you need a masterstroke to stay in office. It won't come about through slow withdrawal in Vietnam. Your big hope, we think, may lie in dramatically ending the war and appealing to exactly those people who distrust you. You need them, and we think you can still make them respect if not love you.

NIXON (fervently): In all candor, I'd like nothing better. Nothing.

VOTERS. We suggest that one clue may lie in that same Gallup Poll, which contained a startling finding. Despite all our new personal fulfillment, it said, too many Americans feel that the United States has "slid backward" in the past five years. Few other nations on earth feel that way today. But 50 per cent of Americans believe that national tensions are now grave enough to "lead to a real breakdown in this country." Significantly, the poll suggests that we are worried less about personal ills than about common social problems—drugs, crime, the environment. We are also tired of a status quo that doesn't work; more and more of us have lost faith in national leadership and institutions. Some may welcome demagoguery, but most of us yearn for something saner—basic, "systemic" reform and real leadership to carry it out. How's that for a Presidential agenda?

NIXON: I entered this office with precisely all that in mind. I could not have been more determined to heal this country's wounds; read my Inaugural Address. But sometimes I've had bad luck and worse advice. The war, of course, has overshadowed everything.

VOTERS: Then get rid of it. Seize peace and run with it. How did de Gaulle extract the French Army from Algeria, surmount talk of "defeat," and stem the very real threat of a "stab-in-the-back" civil war? He did it by insisting that the war was foolish, by appealing to every Frenchman's higher loyalty to the mystic chords of nationhood, of *gloire*. He did it by offering hope—a new common purpose in restoring France to intellectual and technolgical preeminence. We are very different people, but we too yearn for great leaders with a powerful sense of the true national interest. In his time, Lincoln stated the proposition: "My paramount object in this struggle is to save the Union, and is not either to save or destroy slavery. If I could save the Union without freeing any slave, I would do it; and if I could do it by freeing all the slaves, I would do it; and if I could save it by freeing some and leaving others alone, I would also do that." In short, our greatest President, the first Republican, believed that a leader's paramount duty is national preservation.

NIXON. I sense and respect your call for me to articulate true priorities, but I am still not sure what specific actions you advocate.

VOTERS: Start by heeding General Ridgway's advice that we quickly resolve the prisoner issue and forthwith "remove every U.S. uniform from the mainland of Vietnam except Embassy guards." In other words, don't leave any "residual" force; that way lies more enemy attacks and more fighting. Face the facts and get out cleanly. Stand fast against any charge that America was defeated; instead, stress that we have won a greater victory—a new freedom to focus on the problems that are tearing this country apart. Then *lead* us in solving those problems. Above all, risk being a one-term President: that way, you may even get reelected. But if you do not, be assured that history is likely to reserve a far more luminous place for a leader with the moral courage to quit a useless war than for one who extends it for expedient reasons.

NIXON: What you are asking for, in short, is the first American President *brave* enough to lose a war for the sake of a greater national victory.

VOTERS: Precisely.

NIXON (standing and nodding at Haldeman): Thank you, ladies and gentleman, and I herewith order this entire dialogue to be strictly on the record.

VOTERS: Thank you, Mr. President.

URIL "COMPY" COMPOMIZZO—UNOFFICIAL VOICE OF THE CALIFORNIA CAMPER

HON. JEROME R. WALDIE

OF CALIFORNIA

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. WALDIE. Mr. Speaker, one of the roles a Congressman must perform is that of the ombudsman. As a public official, he investigates activities of Government agencies that may infringe upon the rights of his constituents. He is the intermediary between the often confusing Government bureaucracy and the inquiring citizen.

A constituent of mine, Uril "Compy" Compomizzo, makes this role a joy to carry out and my task as a Representative that much easier. As a legislator, I appreciate his keeping me apprised of the grievances of the camping American, an activity I too, participate in and enjoy.

Compy is the "Unofficial Voice of the California Camper." In that role, he helps the person he calls the "little man" in his travels to camping areas around the State and country. As an example, he was largely responsible for changing the California State Park's reservation system into a more efficient and convenient arrangement. Recently, he has lobbied for reasonable camping rates at State and national parks. His persistent and very effective "voice" has carried from a newspaper column he publishes through the Halls of Congress. This kind of service deserves recognition, and for this reason I enter the following:

[From the Antioch Ledger, Aug. 11, 1971]

CAMPING REPORT

(By Compy Compomizzo)

This past week has been very exciting here at Russian Gulch for the Compy family and the many friends camped with us.

The fishing has been the best in many years, so everyone is getting their fill of good fresh ocean fish. No trouble to limit out.

The surf fishing has also been hot. In about one or two dips of the net we have gotten enough to supply the whole camp. Its just hard to believe, but even the weather has been nice.

One thing I was excited about was being asked to be a guest on radio station K.M.F.B. at Mendocino. Ed Bowen the announcer, invited me to take part for a half hour on his program (View Point). It was very interesting and we received many calls on park problems.

On Saturday evening, 29 of us camped here at Russian Gulch went in to Fort Bragg to The Footlighters Little Theater. This is an annual event for all of us and the name of the play was In The Good Old Summer Time. Its a must on your list if you get up this way. The whole cast is great, but the antics of Pal Lima are outstanding. Ask for front row seats if you plan on attending.

Its best to call ahead for reservations as its on Saturday evenings only. Call 707–964–3798 or write care of Footlighters Little Theater, P.O. Box 575, Fort Bragg, Calif. 95437. I'm sure these people will show you a good time.

Also if you get up this way the Point Cabrillo Lighthouse is open for tours on Saturday and Sunday. This is one tour children would enjoy.

One of our side trips we are planning while camped here is a trip up to Eureka, so more about this in my next article.

COMPOMIZZO, REMARKABLE MAN

One of the happiest "little guys" around this week had to be Uril "Compy" Compomizzo of Antioch.

The "little guy" designation is not ours—that's what Compy calls himself, although another sobriquet, "the unofficial voice of the California camper" is more to the point.

Compy is happy because his appearance on a San Francisco television program this week caused that station's switchboard to be flooded with calls.

He didn't even mind being called "Campy" by some people, who got his nickname tangled up with his outdoor activities.

The points he made were that both the federal and state park systems are pricing enjoyment of the parks out of reach of the little guy.

Yosemite, for instance, now charges a $3 per day entrance fee for each day spent in the park, plus a camping fee of $4 per day. The Golden Eagle passport plan, which once cost $7 a person and entitled the bearer and his carload to enter national parks without additional charge, now costs $10. Even with that permit, which gets the entrance fee waived, it still costs $4 per day to camp in Yosemite.

At the state parks, the fee for camping is $3 per night, with a charge of 50 cents per night per dog, plus charges for marina and parking lot uses That's with a tent or camper. It's more for a camper or trailer with electrical hookups.

The fee hikes are "just a start," Compy warned viewers.

His solution is what he has done: Keep after park officials, legislators and others involved in operation of the parks.

As a result of his efforts, which were nearly single-handed, he got the state parks' reservation system changed, to make it more convenient for campers to reserve space. He also has fought for better policing of the parks and for fee reductions for senior citizens.

Why does Compomizzo devote much of his free time to the campers' cause? Because he's a concerned "little guy" who has found that politicians will listen to complaints when the cause is just and the complainer is persistent.

Compy, we're sure, will always remain the "little guy" in his own eyes, but to the California camper he is looming larger and larger.

As television interviewer Jim Dunbar (Channel 7) told him, "You'll be back on the air again soon, Compy."

He already writes for five newspapers, including The Ledger, and accepts numerous speaking engagements. He's a remarkable man, who asks nothing for himself, and we're happy to have played a small part in helping make him, and his cause, known.

[From the Pittsburg Post-Dispatch, July 20, 1971]

CAMPERS UNHAPPY WITH FEES PHONE IN VIEWS TO 'COMPY'

The switchboard at KGO-TV Monday was flooded with callers unhappy over the upward trend in camping fees after Uril (Compy) Compomizzo of Antioch voiced com-

plaints about the hike on the Jim Dunbar show there.

Compomizzo, the unofficial voice of the California camper, was Dunbar's guest for about a half hour on the morning program on Channel 7 in San Francisco. The Antioch man answered questions on the air, getting more calls than the station could handle.

Additional calls were waiting for him when he got home, plus a copy of a letter indicating that his campaign against excessive fee hikes may pay off in legislation.

U.S. Senator Alan Cranston wrote William Eichelbaugh of Antioch that he was cosponsoring legislation, S. 1172, which would exempt persons 65 years of age and older from entrance fees to national parks and recreation areas.

Eichelbaugh had written the California senator after reading one of Compomizzo's columns urging readers to make their feelings known to legislators on the fees.

That message was broadcast further Monday when Dunbar read Compomizzo's column urging a squawk on the fee increases, and Compomizzo warned viewers to "get involved" or face the prospect of being priced out of the parks.

Compomizzo said the fees at campgrounds were "just getting out of hand" and were so high that some persons, especially retired persons could no longer enjoy camping.

He said the fee at improved state campgrounds was $3 a night and the fee at state camps with trailer hook-ups was $4.50 a night. The Golden Eagle Pass of the national park service has been raised from $7 to $10.

Even with the Golden Eagle permit, the camping fee at Yosemite Valley is still $4 a day, although $3 entrance fee is waived for purchasers of the annual Golden Eagle permit, he said.

The fee hikes in recent years, Compomizo told viewers, were "just a start," with more coming.

Dunbar traced the history of Compomizzo's fight against the state campground reservation policy which previously had tied up campgrounds for months in advance.

After his "little guy'" campaign against the policy, it was changed to permit reservations no more than 90 days ahead.

Compomizzo was accompanied to San Francisco by his wife, Anna, and youngest son, Walter. When he got home, James Woods of Antioch presented him with a tape of the broadcast, promising to write Rep. Jerome Waldie, D-Antitoch.

In the letter from Cranston, the senator said those who enjoy and use parks should bear part of the cost of maintaining them but added he felt that recreation should be available to all.

CONGRESSMAN KYROS REVIEWS URBAN PROBLEMS

HON. BROCK ADAMS

OF WASHINGTON

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. ADAMS. Mr. Speaker, since Congressman PETER KYROS was first elected to the Congress, I have had the pleasure of working with the gentleman from Maine in many areas of importance to our Nation's urban communities. Our work together as members of the Committee on Interstate and Foreign Commerce and the Committee on the District of Columbia has made me more aware of the common problems of cities in our respective States, despite the tremendous geographical distance between the coast of Washington and the coast of Maine.

I was most interested, therefore, to recently read of Congressman KYROS' meetings with officials of Portland, South Portland, and Westbrook, Maine, during the recent congressional recess. I think the issues discussed at these meetings are important to all of us, and I would like to bring to the attention of my colleagues two articles which appeared in the Portland Evening Express of August 28, 1971; and September 3, 1971:

[From the Portland (Maine) Evening Express, Aug. 28, 1971]

REP. KYROS BENDS EAR TO WOES OF TWO CITIES

(By David McNabb)

Rep. Peter N. Kyros got a broad view yesterday of the myriad of problems which beset the cities of South Portland and Westbrook. His visit left officials of both communities a bit more hopeful about their chances of resolving some of the more complex issues with which they are faced.

Taking advantage of the current congressional recess, Kyros has returned home to spend some time with his family but true to form he has decided to mix business with pleasure.

During yesterday's discussions with South Portland's City Manager Ronald E. Stewart and Westbrook Mayor Donald K. Saunders he touched upon a host of topics including transportation, urban renewal, health, drug abuse, and recreation.

The talks showed that the same basic problem areas are common to both cities though the priorities which they have been assigned differ substantially. The session with South Portland officials perhaps proved more productive as Mayor Saunders, who has been without the services of an administrative assistant for some time now, was unable to delve very deeply into specifics.

Stewart put sewage treatment at the top of South Portland's list of concern, citing as major worries funding delays and some proposed legislation which could put a damper on local initiative.

He said the city has been ready for some time to begin construction of the treatment plant but the state won't commit any money for the project before next July. The money in fact may not be available until 1973.

Stewart is also concerned about legislation being sponsored by Sen. Muskie, which calls for the elimination in 1974 of all federal support to sewage treatment projects not being planned and managed by a single, state-controlled agency. He's not sure whether the bill's passage would leave the city holding a very expensive bag should it continue to proceed on its own initiative.

Kyros promised to see what, if anything, can be done to "accelerate" funding. He further promised an immediate ruling on the implications of Muskie's bill.

Sewage treatment is not a particularly troublesome area in Westbrook because no major steps have been taken beyond those required for compliance with the regional plan now being put together. It's possible that residents could reject the regional project, but Mayor Saunders feels the chances of that are fairly remote.

The problem with which Saunders was most concerned is the city's lack of expertise in availing itself of federal programs. He feels the city is not quite large enough to justify the expense of hiring a full time man to dig out those programs for which the city could qualify.

Kyros, who has suggested the formation of a state level task force to assist rural schools with that very problem, said that state officials perhaps could be induced to form a similar type force to aid smaller cities and towns.

Though he realizes that federal program applications need some "innovative punch," the congressman said his role concerning such applications is pretty much limited to giving them a push after they've been filed.

Of particular concern to Kyros was the apparent lack of facilities in both cities for delivering health services.

Stewart agreed, noting that besides its obvious lack of normal medical care facilities, the city has only the limited capability of its Child and Family Services clinic for dealing with serious mental and social problems.

But Saunders, noting that there's "very little criticism" about health services, said he felt Westbrook's existing program probably is adequate.

Kyros however dismissed lack of criticism as an indicator and emphatically said, "The time has come for all communities in the state to have community health centers."

He was very much in favor of both cities having facilities which could offer a wide range of health services to everyone including those with drug problems.

Both Stewart and Saunders expressed satisfaction with progress in the area of public housing, though Stewart said the city needs and is ready for another 100 units besides the 150 which it already has been allocated.

They were more concerned about the area's public transportation problem. Stewart particularly wanted to know whether or not federal aid will be available to assist with the acquisition publicly owned facilities should the Greater Portland Transportation Co. leave the area.

Kyros, who said his own experiences here during rush hours has convinced him of the need for improved mass transit, promised to talk with Department of Transportation officials to determine if help would be available should a publicly owned system become necessary.

[From the Portland, (Maine), Evening Express, Sept. 3, 1971]

KYROS CHATS, LISTENS TO CITY OFFICIALS

(By Brian Arsenault)

Rep. Peter N. Kyros sat down with City Manager John E. Menario and other city officials today to discuss Portland's problems and what can be done about them.

For the most part Kyros took on the role of listener. He heard city officials discuss their concerns in areas ranging from unemployment to housing, asked questions, and pledged his efforts and cooperation in Washington.

A major part of the session was taken up by Menario again leveling a blast at the way Emergency Employment Act funds are being distributed in the state. Under the distribution scheme devised by the Maine Employment Security Commission Portland will receive $140,096 of a $4.5 million grant provided to the state.

MENARIO CLAIMED

Portland's share of the grant does not equal Portland's unemployment problem which the city manager said has reached over 7 per cent. He said the distribution formula is inequitable.

Kyros pledged to go to the U.S. Department of Labor to seek answers on how funds should be distributed. The representative was also interested in how Portland plans to spend its share of the funds.

Menario replied the city was interested in establishing six police cadet programs and positions in city departments to work on the Dutch elm disease problem, park maintenance and improvement, and rodent control.

An issue raised by Menario that Kyros has closer personal contact with was one concerning legislative efforts to establish a trust to govern the development of islands in Casco Bay. Menario said the city was concerned about Kyros' support of such legislation because they feared it would take control of city land out of the hand of elected officials.

Kyros replied that he did not think city officials and he were as far apart on the issue as it might seem.

"This legislation was sold to me with the proviso that local people would compose the trustees," Kyros said. "I wouldn't go ahead with enabling legislation until a local input is guaranteed."

On the question of housing, Kyros was briefed by John S. Dexter, director of the Public Housing Authority.

Dexter told him that after several years of slow growth activity in public housing is starting to move quickly. "We have 500 units under management, 450 under construction, and 100 on the drawing board," Dexter said. "We're seeking a federal reservation for 800 more units that we need."

Kyros told Dexter to keep him appraised of any aid needed to secure the reservation.

Accompanying housing the question of demolishing dilapidated structures was raised.

Menario said the city is currently using a $50,000 federal grant to get down as many as possible but that the funds would soon run out. He noted the city will apply for more federal demolition grant money and expressed hope it would be available.

Kyros reacted: "Let me know when that application goes in."

Other topics of conversation were the development of Portland Harbor, school construction and revenue sharing. Menario is a strong supporter of both state and federal revenue sharing.

Kyros observed that there was little chance of revenue sharing making it through the legislature and that President Nixon is not even pushing hard for it although it is his proposal.

AWARD WINNING DRUG ABUSE ESSAY

HON. WILLIAM D. FORD

OF MICHIGAN

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. WILLIAM D. FORD. Mr. Speaker, in this day of drug addiction with its related questions concerning why and how it could possibly happen, it is refreshing to read an article written not by a reformed addict, nor a physician, nor a psychiatrist, but by a young junior high school student who was asked to write her own thoughts on the subject of drug addiction.

Miss Cindy Goddard, daughter of Mr. and Mrs. Leigh D. Goddard of Westland, Mich., has enabled us to read her mind, to view her musings about how this very important problem relates to her own life, what she thinks might actually tempt young people into involvement with potential tragedy.

For her efforts, Cindy won first prize in the Wayne-Westland Parents Drug Abuse Committee contest, which solicited her thoughts, and had her article printed in her community paper.

Her achievement has given us the benefit of reading a sincere, questioning account of a young person's place in our present society, and at this point I would like to share it with my colleagues in the House of Representatives:

WHO ME? A DRUG ADDICT—YOU MUST BE KIDDING!

(By Cindy Goddard)

Who me? A drug addict—you must be kidding! This is my first thought as I sit here in my room and think about writing an essay on drugs and drug abuse. I can only say I'm a little sick of hearing about all this. I know that it's important to tell me all of these things, but the warnings follow me wherever I go. I tell my teachers and family and friends that I don't want drugs, and that I don't need them. It seems to me they should trust me and ease off the subject. No one seems to understand, and they keep on with the same warnings. I wish they would believe me. I honestly don't want drugs!

Sometimes I wonder what runs through my parents' minds about drugs and the kids of today. I suppose that most kids who start taking drugs never actually picture themselves as being addicted to them. They must feel that it would be all right to try them just once. It's hard for anyone to feel honestly that they're an addict—real hard. The thought of myself as one seems very remote to me.

I know that adults feel that if I know the danger of drugs, I won't try them, and I suppose they are right. I think what scares me the most is not knowing what you're doing while you are under the influence of these drugs. I guess you could even kill someone and not know the evil you had done. What kind of 'fun' would that be?

I believe most kids probably take drugs because they are bored. Free and easy seems to be the feeling they want to get. The way it looks to me, though, there isn't much in this world that is free and easy!

Even drugs cost money. And some of those trips surely can't be easy! The answer to "why shouldn't I try it?" is very common. All the adults do is tell us how much of a mess this world is in. It would be easy to say, "Why shouldn't I live it up while I'm here?" The thought then comes to me—if most of us were to float around on psychedelic clouds, of a sort, there would be no one able to think of any way to do something about the problems we have to meet right now.

I guess we could say we didn't create these problems. But after all, this line of reasoning won't make them go away either. You just can't turn your back to problems when they arise. I think the world must be in rough shape if kids have to resort to drugs to have a good time. It seems in so many cases the adults of a family are all working and there isn't anyone at home to talk to or really care about what the kids are doing.

In such a circumstance, it is rather easy to look in the wrong direction for excitement and attention. I wonder how I would feel if I knew a good friend of mine were taking drugs? I really don't know just what my reaction would be! Maybe pity, disgust, awe, shame; I could possibly feel any of these. Would I still be a friend, or would I back off? I know I wouldn't tell anyone, because I just don't believe in this. The thought of being put in a scene like this does make one wonder.

Could I honestly be of any help? I doubt it. Usually, if a person decides to "turn on" he has a pretty deep reason for doing so. I don't think I would be able to give that person the understanding they would rightfully deserve, but I do know I feel terrible watching this happen.

I presently have some friends who like to wear army jackets, jeans, and long hair. But do you know it is really funny to me to watch people and their reactions to these kids? They automatically label them as addicts or undesirable. The odd note to all this is that usually it is the clean cut boy or girl "down the street" who turns out to be the true addict. It seems you just never know.

The more I think about these things, the more I wonder about the answers to all the questions I've been thinking about. I can feel very secure in my own home, saying I'll never take drugs. I think this is what it's all about; the worry and the warnings. When I'm placed in a different situation away from parents and home, and perhaps put with people who live within the drug scene, then would I remain true to the things I've said above? Would I have the courage to be different?

I hope so, because I honestly don't believe I would have much of a chance by following the drug way of life. I surely hope the day will come when the world won't be in such a mess that kids will have to be aware of these things. Maybe then there won't be a drug problem.

Maybe then. Maybe then!

SOULVILLE FOUNDATION GIVES CHANCE TO SOUTHEAST LOS ANGELES CHILDREN

HON. RONALD V. DELLUMS

OF CALIFORNIA

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. DELLUMS. Mr. Speaker, it is not easy to "make it" if you are a ghetto kid. I know. I came from west Oakland ghetto.

No one means for enabling a ghetto child to break out exists. Both Government and private efforts are imperative.

For many black youngsters the way out has been through the opportunities offered by professional sports. One such youngster was William "Willie" Naulls. Willie Naulls, a product of the southeast Los Angeles ghetto, was an all-American basketball star at UCLA, then went on to play professionally in the National Basketball Association for 10 years and was a member of one of the fabled Boston Celtics world's championship teams.

Now, as a businessman and real estate developer in Los Angeles, Mr. Naulls has established the Soulville Foundation to help children of the southeast Los Angeles area receive quality assistance in physical education, health, and nutrition information, remedial academic education, and contemporary issues and recreation.

I am very impressed with the program that Mr. Naulls and his associates are developing. I hope that the public will support the Soulville Foundation, and I see it as a model to be applied in other areas of the country.

Mr. Naulls has put together a brochure describing the foundation, and I insert it into the RECORD.

The brochure follows:

THE SOULVILLE FOUNDATION

A FOREWORD

I have wanted to create The Soulville Foundation for a long time. I suppose one reason is that as far as I have sometimes come from those Southeast Los Angeles streets, I have never forgotten how it was to play in them.

Most Black professional athletes have the same story that I do . . . a story filled with such words as "poverty", "prejudice", "ignorance" and "luck". How lucky were those of us who made it, and how well we knew it. We certainly had talent which we worked hard to develop, but every one of us can recall some gifted natural athlete who played along with us and stayed behind when we left.

Why? Perhaps he fell down one day and was unaware that he would go lame without medical attention. Maybe he quit high school

because his family's need for food seemed more important than a diploma. Or perhaps the Navy Recruiter made the service sound more interesting than the ghetto, and he signed up for six years. The possibilities are many, and they apply not only to unrealized potential athletes. Most of the kids in the streets and schoolyards never really succeed for generally the same reasons.

There is an ingredient to success other than how the chips fall, however, and that is the belief that it is possible to succeed. That would seem obvious, but a child who sees much more failure than success—and not for lack of trying—expects nothing different for himself. He might even conclude that it was smart not to try.

Through The Soulville Foundation, we hope to reach the children who don't believe that they can win.

Please be generous.

WILLIAM D. NAULLS.

THE FOUNDATION

The Soulville Foundation has been created to bring to the children of Southeast Los Angeles a variety of programs in the areas of physical education, health and nutrition information, remedial academic education, contemporary issues and recreation. Concentrating ostensibly on physical education and recreation. The Soulville Foundation will be using the magnetism of these to channel participating youth into the other vital programs. With the vehicle of organized and supervised play, the Foundation will attempt to give direct and personal guidance to the many children who have been shut out of the overcrowded, understaffed and inadequately financed programs currently offered in the local schools and city parks. In many cases these same neglected children make poor academic showings, not for lack of ability, but because a child's logic reasons that the disinterest shown him should be reciprocated. It is hardly surprising that he ignores the warning that he is only hurting himself when it comes from those who notice him only if he is doing poorly. In a time when the school system is facing bankrupcy, when athletics and other so-called inessential curricula may be eliminated, and when social and recreational programs are suffering cutbacks, we cannot depend upon public funds to finance the specialized programs needed in the underprivileged community. Rather than continue to lobby for programs that have been repeatedly denied, The Soulville Foundation will apply private funds to direct action within the community.

THE HARVEST OF NEED

Daily we hear through the media of the deprivation that pervades all sectors of communities such as Southeast Los Angeles. Unemployment, educational deficiency, inadequate housing, poverty, hunger, high infant mortality, poor medical services, drug abuse, criminality, lack of local job opportunity, discriminatory credit practices, archaic or nonexistent public services—an avalanche of vicious conditions. We have let ourselves believe that token changes such as a growing Black middle class and War-on-Poverty programs are indicators that such conditions, which were allowed to fester into the civil disorders of the mid-sixties, are now being alleviated.

But the facts indicate the contrary. In April of 1971 the unemployment figure for Blacks was 10%, four points higher than the national average and its greatest level since 1964. The Census Bureau revealed that in the decade since the last census, the number of people falling beneath the poverty level has increased. The California Superintendent of Public Instruction declared that, were the school system a public corporation, it would be forced to declare bankruptcy. As a matter of course, inner cities are described as "dying," and the crime rate is automatically "high." In 1969, prior to the full effects of the current recession, unemployment in the community of Watts was two full points higher than the figure for the "civil rights" year of 1964—16% as opposed to 14%. Unemployment rates for Black teenagers range from 20% to 45% depending on the community; in 1969 the Watts figure was an unspeakable 42.9%. All of this has inflated the welfare rolls, and to meet these costs governments cut back or abandon the programs that solve rather than feed the problems.

A ghetto child ten years of age is growing up under conditions which are actually worse than those existing before he was born. There is no reason to project that he will escape a situation more decayed than the one which trapped his parents.

When we fail to answer the needs of a child, we are party to the creation of a problem adult. Untrained and uneducated, he will one day be unemployed. Underfed, he will be sickly and he may steal. If he is neglected, he will become apathetic or hostile; if he's bored, he'll look for kicks. The time to tackle drug addiction, hard-core unemployment and the high school drop-out rate is long before they happen.

THE INVESTMENT OF TIME

One of a child's biggest needs is for play. Children will play with nearly anything, and most parents know the experience of the gift that is set aside for the wrapping paper. Magnificently resourceful, in the absence of organized games or toys children will always make do—from inventing games to be played with sticks to constructing private club houses out of cardboard boxes. A child alone will find a game for one.

Children love to play with other children, but one thing that will lend excitement and importance to a child's play is the participation and interest of an adult. At both ends of the social scale, children bitterly miss the parent who can never be there to play a little ball with him or see what he has made. So important is this simple human experience that children denied parental or adult attention for various reasons carry a deep feeling of deprivation and even resentment into their adult lives. The adult who will spend time with a child and share his interests is an important figure in his life. The relationship that develops between the two will be bound by trust and respect, and the child readily accepts the adult's guidance and authority.

In the poverty pockets, where there are many one-parent families and where survival demands the time of most adults, children suffer a widespread lack of adult interest in this vein. Circumstances force those responsible for the child to be concerned more for his immediate physical needs; thus he is robbed of this relationship and the influence and guidance which is the normal result.

Chances are slim that a child will find this adult attention at school. Teachers are swamped with the demands of overcrowded classes and athletic directors are forced by understaffing to be more concerned with the supervision of the facilities than the individual needs of the youngsters. At best he may latch onto some older youth, a hit-or-miss proposition which carries the possibility of negative influence.

The feeling that something is missing from one's life oftentimes impairs the ability to function. An adult who has experienced a personal loss or had a totally dissatisfying job knows that it is difficult to overcome the disinclination toward work, and the overwhelming desire to escape. Children are no different, and having less discipline they easily fall into patterns of neglecting schoolwork, avoiding classes, and seeking diversions—until they have fallen behind. The added complication of not understanding what is going on in the classroom serves to reinforce the original pattern. These children are still in grammar school; yet the seeds of a tragic life have been sown.

GETTING THE ROOT

The Soulville Foundation wants to face the problem of neglect head on and treat as well the serious side effects. The following comprehensive program is designed to answer the need and consequently arouse the normal curiosity and love of learning which the ghetto environment has suffocated.

ORGANIZED PLAY

Emphasizing a child's natural need for play and the importance he places on adult participation, a multi-sport program will be operated year-round. Plentifully staffed with professional and student leaders, all will be trained to function both as coaches and as guidance counselors for these youngsters.

Applying the benefits of team play, all participants will be assigned to specific standard-sized teams under a regular coach. This will teach through personal experience the importance of teamwork, the pride of achievement, the correlation between effort and success, and will help to overcome any fear of competition.

In coordination with the athletic program, the youngsters will be taught the benefits of physical fitness and the importance of caring for the body.

HEALTH AND EDUCATION PROGRAMS

The American public in general is poorly informed in the areas of health and nutrition, and ghetto youth particularly so. Every youth involved in the program will attend regular seminars in the subjects of health care, dental care, vitamins, diet and calories. The Foundation will research and compile information on the nutritional values of foods which Black children eat most.

Children who have academic handicaps will be steered into classes in remedial math, English, spelling, and reading. These classes will be staffed by professionals and trained college students who will use some of the methods perfected by the Direction Sports Program. Great success has been achieved with hard-to-teach children by orienting the subject matter to athletic situations.

Seminars will be held in the area of educational aids. Instruction in the use of a dictionary, use of library catalogues and reference materials, and tips on study habits are frequently overlooked.

CONTEMPORARY ISSUES

Workshops for the discussion of issues of interest and permitting the direct participation of the members will be organized. Suggested topics: Law Enforcement, Drug Abuse, Race Relations, etc.

A Speakers' Program to feature figures in Sports, Black Leadership, Politics, etc., will be offered to the youth.

THE ULTIMATE GOAL

If The Soulville Foundation is to succeed, it will need a facility. Not only do the children of Southeast Los Angeles need the program we have outlined, but they need as well basketball courts, baseball diamonds, football fields, indoor gymnasium equipment, a swimming pool, handball and tennis courts—to name a few. The facilities operated by the schools and parks are inadequate and congested. At every school, facilities for certain sports are nonexistent.

To operate the Foundation's program out of these facilities would only reduce if not annihilate its efficacy. Poor lighting makes the parks practicable only during daylight hours; regular and after-school use limits the availability of school facilities. In both cases, use of the facilities is subject to approval and must be scheduled around the activities of other applicants. Working under these conditions, the time spent with the children would be in direct proportion to the availability of facilities. The effort to make personal contact with the youngsters would be severely hampered, and many chil-

dren would be lost in the constant shuffle between parks and schools. Above all, our activities would contribute to the congestion and inadequacy which are excessive already.

To do the work, we must build an athletic center complete with the indoor and outdoor facilities needed, as well as showers, locker rooms, public address system, classrooms and offices. Without such a center, it will be virtually impossible to develop the educational and social dimensions of the program. With the finest facility in the area we will attract the children we are seeking to help, and their parents will be secure in the knowledge that they are safe and supervised.

SUCCESS OR FAILURE?

The scope of The Soulville Foundation's program and its indispensable requirements are dependent upon a generous response from you. Underfunding will turn a progressive and ambitious program into another inadequate one—limited in its function and serving only a fraction of the children in need.

We are asking you, therefore, to contribute wholeheartedly to The Soulville Foundation. The tax dollars that you are now spending with the slim hope that they will reach projects such as this will be reduced by the tax-deductible dollars which you can invest in the efforts of a group of private citizens whose goals you know. Anything you give will be spent entirely on the various programs and the facility. The directors are donating their work to the Foundation, and they will not receive salary or compensation of any kind.

Your generosity is the major ingredient for The Soulville Foundation's success.

DIRECTORS OF THE SOULVILLE FOUNDATION

William D. Naulls, President; ex-professional basketball star, Boston Celtics; real estate developer and businessman.

Rosey Grier, Vice President; ex-professional football star, Los Angeles Rams; entertainer.

Bill G. Naulls, Secretary/Treasurer; General manager, Kentucky Fried Chicken of Rosecrans and Central, Inc.

Ernie Shelby, Director of Public Relations; ex-All American track star; commercial artist, song writer.

Herbert B. Avery, M.D., obstetrician and gynecologist.

David E. Barnett, Certified Public Accountant.

Marty Freedman, clothing manufacturer; owner/operator, Mr. Marty of California.

Samuel Gilbert, developer of high rise construction; owner/operator, Wilson Gilbert Construction Co.

Myrtle U. Caton, M.D., Internal Medicine; health care administrator, Charles R. Drew Postgraduate Medical School.

Bill Russel, ex-professional basketball star and coach, Boston Celtics; entertainer.

Augustus A. White, III, M.D., orthopedic surgeon; assistant professor of orthopedics, Yale University Medical School.

Daily Naulls, Foundation's Father.

Bettie R. Naulls, Foundation's Mother.

LT. GEN. H. M. ELWOOD DELIVERS EXCELLENT ADDRESS TO 48TH ANNUAL MARINE CORPS LEAGUE CONVENTION IN SAN ANTONIO

HON. O. C. FISHER

OF TEXAS

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. FISHER. Mr. Speaker, a month ago Lt. Gen. Hugh M. Elwood, USMC, Chief of Staff for Plans and Programs, addressed the Marine Corps League convention in San Antonio. It was well received by a large audience of marines and visitors.

General Elwood is one of the most distinguished aviators in the U.S. Marine Corps. During combat service in the South Pacific he was credited with downing five enemy aircraft and was designated a Marine Corps ace. He took part in both the Korean campaign and in Vietnamese operations. The general was first assistant wing commander of the 1st Marine Aircraft Wing and subsequently Chief of Staff of the Third Marine Amphibious Force. He was nominated by the President for promotion to three-star rank in October of 1970 and now serves as Deputy Chief of Staff for Plans and Programs at headquarters, U.S. Marine Corps.

This distinguished American was well qualified to speak about problems related to our national security. The address follows:

SPEECH OF LT. GEN. H. M. ELWOOD

It is indeed a pleasure to be here in San Antonio to represent General Chapman on the occasion of the Marine Corps League's 48th anniversary. This is my first visit to San Antonio and I am impressed more than even a Texan could convey. You all know that Marines join the corps to see the world. Now, after two days in beautiful San Antonio, as my teen-age daughter would say, I have finally "made the scene." Using another of her expressions, I have concluded there is "no way" to reach San Antonio over the vast spaces of Texas except by air. In contemplating this trip I remembered the experience of a defense department official who was about to make a trip by air to Europe. Viewing the recent rash of mad bombers on aircraft with some discomfort, he asked one of his statistics experts to compute for him what were the odds that a bomb would be aboard his plane. Slide rules and computers revealed the odds to be one in a million. Not bad, but still disturbing. The statistician, seeing his boss's continued uneasiness, added brightly, "but don't worry sir, we have the answer. You carry your own bomb aboard. The chances of two bombs being aboard an aircraft are only one in a billion.

First, I bring you the special and warmest regards of the Commandant of the Marine Corps, General Chapman, and his regret that he cannot be here himself. Iron Mike and Dicky Chapelle are both names that stir the hearts of all marines and to be present for their commemoration through the medium of these Marine Corps league awards is a privilege indeed. And I know I speak for all Vietnam marines in expressing our particular pleasure that you chose two fellow Vietnam campaigners as the recipients this year. The league's "Marine of the Year" award appears to be a "family affair" for you leaguers but it is also a privilege to be on hand for this occasion.

It is interesting to note that these awards are relatively recent in the history of the Marine Corps league, these, and other activities of the league, such as your youth physical fitness program, reflect a recent vigor and vitality in your organization which are heartwarming to the commandant and must also be to every thinking American worth his salt. For in the days ahead this country is going to need all of the vigor it can find to combat the problems of drugs, personal disconduct and patriotic lethargy.

The Marine Corps league is attacking the problem at the best of all places—with our young people. With wisdom which could accrue only to some old duffers who had once upset their share of outhouses, you have accurately perceived the problems of disspelling youthful energy and exuberance in an environment of psychadelics, mind-blowers and "do-your-own-thing." For many youngsters, these problems are insurmountable without some help.

You know that the first place to start is with the honest sweat of competitive, body-building physical workouts. You know that youth's dormant instincts are really with you in this effort and need only to be aroused and channeled, in order to get them over the adolescent hump. To do this takes adult concern, adult leadership and hard, hard work. But consider: with a voting age of only eighteen our span of concern for each individual youth need cover hardly more than a brief four years. It is that period, from the time his adolescence begins to nudge him temporarily out of the human race until he returns again, to vote the future destiny of our country.

You obviously have considered this, and you are doing something about it. In the youth physical fitness program which you sponsor, you are nurturing the very roots of America's salvation. In Marine terms, you are putting to bed early a lot of dog-tired kids and in the doing, they have cheated the flesh pots for another day. And as the statistics experts of my earlier story would observe, surely there is a direct relationship between boy-nights in bed and man-months in correctional or charity institutions.

Your program is yet new but already it is showing significant progress and with your continued efforts it is bound to accelerate. The Commandant and all Marines are proud of you. Your country will some day be grateful to you.

So, with this bond which is between us, I should speak for a moment to the mother-lode—your Marine Corps, today and tomorrow.

As you undoubtedly know, the Marines completed their ordered withdrawal from Vietnam on July 1 of this year. I shall not detail the luster of their performance in that conflict for you have among your number—and among your honored guests—many who can speak to this from intimate knowledge. I shall tell you that they came out of Vietnam as real "pros" should with their equipment intact and their combat readiness unimpaired. They have resumed their posture of readiness in strategic places and, are stronger, more battle wise and better equipped than ever. Further, it should be said that in no other war were the conflicting needs for valor and compassion so compelling and the Marines handled both, with distinction.

In anticipation of the post-Vietnam posture, and the need to slim down, the Commandant redoubled his efforts to demand—and get—a higher level of professionalism from his forces in all areas. This has ranged the gamut, from more and better military education to better housing and facilities, to tighter standards in training, deportment, and waistlines. And be assured that the denominator of his every move is founded on the requirements for combat. The corps, which numbered 317,000 in 1969, is now back to a lean 211,000, with a bit of trimming yet to go.

While tending to the present, the corps still casts its eye to the future and is moving ahead on all fronts. In the equipment field, we are already flying the new and revolutionary harrier aircraft. This British-developed jet attack aircraft fills a large and perhaps final gap in our vertical assault concept. This concept you will recall involves the landing of major combat units by helicopter. The marines pioneered this concept over 16 years ago and it is now a commonplace reality in both the Marine Corps and

Army. What was lacking was a high-performanced, attack aircraft which could provide close air support to our troops on the ground without regard for the availability of paved, sophisticated airfields. As an interim measure, the marines developed a short airfield ashore, utilizing techniques and equipment similar to those on a Navy aircraft carrier. The Harrier, we believe has put an end to this problem for, while it has attack performance akin to our current A–4 Skyhawk, it can also take off and land vertically: with this added performance, its possibilities are tremendous both in aerial maneuvering and in individually dispersed, camouflaged, basing just behind friendly troops.

For the ground marine there are also many innovations, in the fields of laser techniques, infra-red devices, electronics and weapons systems. And for our traditional amphibious role, a completely new, 20-knot amphibious ship has been designed and the initial equipment is being built. One of its features is a special acclimatization gym where the troops can be conditioned to the environment in which they will fight. It can conduct helicopter or Harrier flight operations from her flight deck. It will permit the launching of the landing craft directly into the sea from a flooded well deck. No longer, perhaps, need one contemplate that hazardous trip via cargo net from ship to landing craft.

Concurrently with the design of new equipment, new tactics and techniques are being developed. To keep the logistical tail up with the combat devil-dog the "sea-based concept" is being evaluated, whereby the assault ships remain as the marines' logistical and operating base during an assault. Under this system the reserve units might even be able to slip back aboard for a quick shower and a brace of fresh eggs.

These things are all designed to permit the marine to do his job a little better. But at that final point of contact with the enemy, John Wayne's script for "The Sands of Iwo Jima" still applies, where the fighting man must prevail or stand and die. Recognition of this grim immutable fact must guide the policies of the Marine Corps into the many tomorrows of the future, without regard for current modes or mores. We think it only honest to reveal this fact at the very outset, so it is the theme of our recruiting pitch. Some of our pitch goes like this: "Nobody likes to fight but someone has to know how", or, "we don't promise you a rose garden but long hours, hard work, and satisfaction are guaranteed." I think you are familiar with it.

Are we going to find any takers? It's a little early yet to tell, but we think we shall. Based upon a lot of recent, close observation of young marines in combat in Vietnam, we are convinced that there is nothing really wrong with today's young Americans if they are handled right and you level with them. Further, we are convinced that, regardless of how self-indulgent or material-minded is our society, there will always be a lot of clean-living, adventuresome, patriotic youngsters who will respond to a challenge in service to their country. How else do we explain the regular weekly mayhem on the amateur gridirons? *Either*, we have every reason to be encouraged in our convictions by the superb, tangible efforts which you and similar organizations are making toward strengthening the moral fiber, as well as fitness of our youth. *Further*, with the only acceptable outcome, to a war for survival being to *win* it, there is really no other alternative.

Finally, the relatively small size of the Marine Corps suggests that our procurement problem will be manageable, to steal a final line from our recruiting campaign:

"The marines are looking for a *few good* men."

THE CENTER FOR A PEACETIME ECONOMY

HON. CHARLES W. WHALEN, JR.

OF OHIO

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. WHALEN. Mr. Speaker, for a long time, I have shared the grave concern about the changing economic needs of our Nation which has been expressed by many Members of the House. This concern is centered in the belief that we can, and should, actively redirect our priorities rather than permit them to be altered in a haphazard manner.

The Center for a Peacetime Economy has been formed to provide an overall direction in this effort. Mr. William Raspberry, the Washington Post columnist, recently discussed the Center's goals and structure. In my opinion, congressional encouragement of organizations of this type can only be extremely beneficial to our society and its changing needs. Therefore, I take this opportunity to bring Mr. Raspberry's column to the attention of the House by inserting it at this point in the RECORD:

[From the Washington Post, July 28, 1971]

LET'S PREPARE FOR PEACE

(By William Raspberry)

It is possible to argue—as Michael Reich and Davide Finkelhor do so convincingly in "Up Against the American Myth"—that the liberal talk about economic conversion is a lot of nonsense, that one cannot have capitalism in this country without also having militarism.

But there are people who cannot bring themselves to Reich's and Finkelhor's down-with-capitalism view but who nonetheless have to believe that good things are possible if only we will work at them.

The good things include a new set of priorities to replace our orientation toward the things of war. And the believers include the practical optimists who are behind the Center for a Peacetime Economy.

Among them are Edie Fraser, former urban consultant, who is running the center's temporary office in borrowed space at 1750 Pennsylvania Ave. NW, Suite 1200; Mark Battle, management consultant and former Labor Department executive; Gerson Green, former research and demonstration chief at OEO, and Ernest Fitzgerald, the former Pentagon deputy who blew the whistle on the C5A overruns.

The Center is based on two main theses: that there will be a conversion from a wartime to a peacetime economy, and that for the conversion to make sense it must have an overall direction based on good information.

"At present," according to the organizers' proposal, "no institution or organization exists that is totally committed to the collection and dissemination of information and the development of the knowledge which will assist this country in attacking its economic transition and policy priority problems. The Center for a Peacetime Economy proposes to fill that void."

Its plans for doing so reflect a sort of hard-nosed realism that sets it apart from many another liberal scheme.

For example, instead of aligning itself against big business interests, it is going out of its way to bring big business into the operation. The board of directors probably will include a handful of industrial giants of the Henry Ford sort. The center will also seek support from the whole gamut of political opinion, while avoiding identification with politics as such.

Among the issues to which the center proposes to address itself are:

How to develop alternatives to defense-oriented industries.

How to establish both the goals and the mechanisms for shifting the economy to new and socially useful priorities.

How to assist workers displaced by the transition—including returning veterans.

The founders believe that these problems, though admittedly difficult, are amenable to an informed, coordinated attack—a belief that is reflected in the center's structure.

The proposals are for two divisions, one a clearinghouse and the other concerned with research and analysis.

"In the nation's capital and throughout the country, there are varied and unrelated important resources of information," the proposal observes. "Although studies are undertaken, reports issued, conferences held and legislation proposed to ease the process of transition from a wartime to a peacetime economy, no single entity has ever collected, assembled, reviewed and properly disseminated the material. Nor has any organization pointed up clearly the gaps in data available and thus assisted in expanding our knowledge base."

The research and analysis division will treat specific issues in some depth and produce "fairly straightforward review, critical commentary, summarization statistical examination" of private and public programs.

It also plans to sponsor seminars and studies by staffers and outside experts.

Central to all the center proposes to do is its founders' belief that most Americans want to see the country move away from a wartime economy—and the belief that it can be done without revolution or even major disruption.

As evidence of their optimism—and of their fear of becoming merely another establishment—they propose that the center go out of business after five years.

That in itself is almost revolutionary.

GIVE NIXON A CHANCE

HON. ROBERT H. MICHEL

OF ILLINOIS

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. MICHEL. Mr. Speaker, those of us who have been involved in political campaigns over the years have become accustomed to having our hides taken off and have not been reluctant to take the hide off of our adversaries in return. That is to be expected—during a campaign—but I must admit that I have become concerned by the knee-jerk type of negative reaction we have heard from certain quarters to almost any proposal which President Nixon might be advocating.

I think we can agree that the problems facing us both here at home and abroad are much too serious for that kind of political practice and hopefully those who engage in these tactics will stop and think a bit before issuing what become almost automatic denunciations of any Nixon program or policy, often before the full extent of that program or policy is known.

An editorial appearing in the August 28, 1971, edition of the Peoria Journal

Star entitled "Give Nixon a Chance" discusses this new political phenomenon and I include the text of the editorial in the RECORD at this point:

GIVE NIXON A CHANCE

It seems to us that instant opposition to anything President Nixon says or does is a somewhat unique current political phenomenon, and a crippling and destructive one.

The President is not insane.

Not being insane, whatever other special cares he may have, it ought to be obvious that every conceivable pressure on this man requires that his first consideration in any policy must be that it works. He must seek and he has access to the best advice and information, a workable answer to the economic problems, a workable answer to the international problems, and a workable answer to the domestic humanitarian problems.

It is entirely illogical to conceive that such is not the first necessity that confronts him as President regardless of any other personal wishes, hopes, or ambitions. All depend on his finding answers that actually work.

Such must be the basis for any political aims of the man who actually has achieved the White House and holds the power he does.

It is irrational to assign other priorities to him.

It is not irrational to suspect a "politics first" attitude among those who do not have the direct responsibility now and who fanatically seek power.

Yet seldom have we seen an era in which the frantic and bitter opposition has been so flagrant in its eagerness to damn any and everything the President tries to do, to assign vicious and patently false motives to every such thing, and to go to excess and extremism in attacking every proposal.

This has become a patently irresponsible exercise of politics, and it is increasingly clear that this country is in enough trouble without these strenuous efforts to PARALYZE every effort of the government to deal with our problems.

Our situation is serious.

We need to succeed as a nation in some of these efforts.

It is no time for sabotage for its own sake. It is no time to paralyze and cripple this country just to hit at Nixon.

We cannot afford the present political practice of automatically cutting up every proposal, every policy, and every effort the White House makes to meet a problem situation.

Nobody is that wrong! Not 100 per cent!

As an old joke goes, referring to a fellow being 100 per cent wrong: "Nobody is that perfect!"

Yet we have a set of politicians these days that have adopted the tactics that anything whatsoever that comes from the White House must be attacked in the most lurid terms, instantly, on whatever grounds can be found or invented.

None of them wants to give Nixon or any Nixon proposal one-hundredth of a per cent of the benefit of the doubt. It is a settled "tactic" regardless of the merits and regardless of the COST, obviously.

This country simply cannot afford this level of political extremism, which disregards the welfare of the country in its single-minded effort to destroy the President.

The destruction assured is much wider than that, and it's too high a price to pay for political gamesmanship.

We have examined our own performance and find this to be a doctrine we have pursued regarding Kennedy and regarding Johnson, as well as Nixon.

There are areas for political fighting—and areas for a decent regard for the welfare of the nation.

There is no instance wherein we have not earnestly supported some policies of any president, and as bitterly criticized others, and we feel no great obligation to Nixon, different from any other.

The difference is the torrent of abuse which reveals the unreasoning animosity of his political enemies—and their blindness to the national interest in pursuing it.

We have to face the reality, that if there are going to be any real answers to our pressing problems, we are going to have to give an honest try to some of Nixon's.

If he fails, we can change fast enough in 1972, but the country needs a fair chance and a full effort, first!

It is as if those who condemn policies the strongest really fear that they might work—because only thus would Nixon be re-elected and their own plans go down the drain.

That seems to be the one chance they refuse to take . . . even though it is the chance on which the national welfare depends.

The people who act so are forfeiting any claim to respect and any legitimate claim to responsibility.

They are revealing themselves as totally selfish, unreasonable and irresponsible—at the very time they bid for power! (C. L. Dancey).

ADVANCED STRATEGIC MISSILES

HON. JOHN G. SCHMITZ

OF CALIFORNIA

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. SCHMITZ. Mr. Speaker, an excellent short guide to understanding strategic missiles and the relationship between offensive and defensive strategic missile systems was recently brought to my attention. So that all my colleagues will have the chance to acquaint themselves with this very informative and easily understandable study I would like to insert it into the CONGRESSIONAL RECORD.

One point to which I would like to call particular attention is the author's comments on the real difference between MRV's—multiple reentry vehicles—and MIRV's—multiple independently targeted reentry vehicles:

There has been a tendency recently to draw a firm distinction between multiple reentry systems which can achieve comparatively little separation between the impact points of the separate warheads and more advanced systems which are designed to achieve the much wider separation needed to attack separate 'hard' targets. The former have been described as MRVs (Multiple Re-entry Vehicles), and the latter as MIRVs (Multiple Independently-targeted Re-entry Vehicles). A distinction exists, but it is one of limited utility and the way in which it has been employed tends to be misleading. It suggests, apart from anything else, that the warheads of a system which does not have the means of achieving wide separation are scattered at random in a general area, as though they were the pellets of a shot-gun charge. In fact, however, it is theoretically possible to predict with some accuracy the individual impact points of these warheads. The important point is that neither those impact points nor the paths which the individual warheads follow from the moment of separation can be as far apart as in the case of more advanced re-entry systems which release their warheads at varying times or at varying angles from the original flight path of the missile. This distinction is an important one, but it is not well indicated by the use of the terms MRV and MIRV, especially as the former must logically include the latter. It is more useful to speak of a single category of Multiple Re-entry Systems (MRESs) and to ask two questions about any particular system within that category:

—Can the re-entry bodies which form the payload of a single missile present more than one target to an exo-atmospheric ABM system?

—Can the warheads delivered by a single missile successfully attack several separate targets on the ground?

A good grasp of the strategic weapons situation on the part of all Congressmen is necessary to forestall what Senator HARRY BYRD characterized last Friday on the floor of the Senate as the "terror of imbalance."

This paper was prepared by Mr. Ian Smart, assistant director of the London Institute for Strategic Studies and appeared as Adelphi Paper No. 63 published in December 1969. The study follows:

ADVANCED STRATEGIC MISSILES: A SHORT GUIDE

(By Ian Smart)

II. THE LANGUAGE

One reason why so few laymen have entered the debate about strategic weapons is that the discussion seems to be conducted by experts in a special, private language of initials, acronyms and terms of art. In reality, the appearance is deceptive; the language is less esoteric than some experts may pretend. Understanding a few comparatively simple terms can enable anyone to interpret the meaning of most of it and to guess at the meaning of the rest.

The first idea to grasp is that of a *delivery system*. This only means the collection of components—aircraft, missiles or submarines, with their supporting equipment—which gets a weapon to its target. The main component of a delivery system which is designed to carry nuclear weapons to their target is a *nuclear delivery vehicle* (NDV).

A nuclear delivery vehicle may be a bomber or a missile. If the NDV is a missile, it may be fired from a site on land, at sea (e.g., a submarine) or in the air (an aircraft). Any missile fired from an aircraft against a target on the ground is called an *air-to-surface missile* (ASM).

Missiles fired from sites on land or at sea against surface targets are further subdivided, depending on whether they are hurled out of the earth's atmosphere by rockets before being allowed to fall freely back to earth under the influence of gravity or remain within the atmosphere, supported by wings and propelled by rocket or jet engines. Members of the former group are called *ballistic missiles;* members of the latter are called *cruise missiles*. In World War II, the German V–2 was therefore a ballistic missile, while the V–1 ('flying bomb') was a cruise missile.

A missile launched from a submarine is called, reasonably enough, a *submarine-launched missile* (SLM). If it is a ballistic missile, it is called a *submarine-launched ballistic missile* (SLBM).

Ballistic missiles launched from sites on land are called by names which indicate the maximum range they can travel, measured along a line on the earth's surface. The main categories are the *medium range ballistic missile* (MRBM), the *intermediate range ballistic missile* (IRBM) and the *inter-continental ballistic missile* (ICBM). There has been no absolute consistency in the use of these terms, but a convenient guide is to regard MRBMs as having a maximum range of up to 1,500 miles, IRBMs as having a range of between 1,500 and 4,000 miles and ICBMs as having a range of 4,000 miles or more. The range of a ballistic missile depends upon the relation between its *payload*—the weight the rockets have to lift—and the power of its rocket motors. The latter are commonly ar-

ranged in a series of *stages* which are fired in sequence. By removing or adding stages, the range of a missile can be reduced or increased.

In addition to strategic offensive missiles (ICBMs, IRBMs, MRBMs, SLMs and ASMs), there are defensive missiles designed to destroy offensive NDVs. A missile launched from the earth's surface to intercept a target in the air is called a *surface-to-air missile* (SAM). A missile fired to intercept an offensive missile is called an *anti-ballistic missile* (ABM) missile. ('ABM,' incidentally, is an adjective, although it often seems to be used as a noun.) ABM missiles are combined with radars and control equipment to form a *ballistic missile defence* (BMD) system.

All missiles, with the exception of some cruise missiles, are propelled by rocket motors. These rocket motors combine to form the *propulsion system* of the missile. The motors may use either a *liquid propellent* or a *solid propellent*. Many liquid propellents are highly corrosive and cannot be placed in the missile until immediately before launch. Some, however, can be stored in the missile for long periods. Such a relatively inert liquid is called a *storable liquid propellent*. Solid propellents, which are essentially similar to the propellents used in rockets for firework displays, can also be stored for long periods inside the missile.

The accuracy with which a ballistic missile adheres to its planned path and arrives at its destination is controlled by a *guidance system*. There are numerous types of guidance system appropriate to different kinds of missile. Some rely upon commands from an external controller, human or mechanical (command guidance). Some require a missile to 'ride' a radar or radio beam (beam guidance). Some permit a missile to calculate its own position by reference to radio beacons or to natural phenomena such as stars (reference guidance). Some enable a missile to identify its own target, either visually or by using means to detect the heat which it emits or the radar reflections which it returns (target-seeking or 'homing' guidance). In general, however, the basic guidance for all ballistic missiles is provided by an *inertial guidance system*. This consists of a platform within the missile, stabilized by gyroscopes, on which are mounted accelerometers to detect any deviation from the planned trajectory or velocity and to order suitable corrections to be made. As with all other guidance systems, such corrections can only be carried out while the missile has the ability to manoeuvre. Within the atmosphere, air resistance can be exploited for that purpose. Outside the atmosphere, where this is impossible, the ability to manoeuvre depends upon modifying the strength or direction of the missile's own propulsion effort. In practice, therefore, a ballistic missile has no power to manoeuvre, and thus no effective guidance system, after its rocket motors have burned out.

The explosive charge, nuclear or conventional, to be delivered by a missile is contained in the *warhead*. In the case of a ballistic missile, this warhead forms part of the re-entry system (RES), which only means the part or parts of the missile intended to fall back into the earth's atmosphere under the influence of gravity. The RES may include more than one separate warhead, each of which will be contained in its own package known as a *re-entry vehicle* (REV or R/V). More generally, each part of the RES which is intended to fall back separately through the atmosphere is sometimes called a *re-entry body* (REB).

The force of a nuclear explosion—which is known as its *yield*—is expressed in terms of the number of tons of TNT which would have to be exploded to produce the same energy. A nuclear explosion with a yield equivalent to that of 1,000 tons of TNT is described as 1 kiloton (1 KT) explosion, while one with a yield equivalent to 1 million tons of TNT is described as a 1 megaton (1 MT) explosion. As a point of reference, each of the bombs dropped on Japan in 1945 had a yield of about 20 KT.

The accuracy with which offensive missiles deliver their warheads against a target on the ground is measured in terms of the *circular error probable* (CEP). This is the radius of a circle centered on the target within which 50 per cent of the warheads can be expected to fall. Figures for the accuracy of missiles (as well as their range) are given in this paper in nautical miles (n.m.). A nautical mile equals 1.152 statute miles. A missile system with an accuracy of 0.5 n.m. CEP is therefore one which can be expected to deliver 50 per cent of its warheads within a radius of half a nautical mile around the target.

Having discovered how strategic offensive NDVs work, it remains to see how they may be used—assuming that their primary strategic purpose of deterrence fails and that they actually have to be launched. There are two important distinctions here. The first distinction depends on whether the NDVs are used to launch an initial nuclear attack or are used only to retaliate against such an attack. The launching of an initial nuclear attack—before the opponent attacked has used any strategic nuclear weapons himself—is called a *first strike*. The launching of retaliation against such an initial attack is called a *second strike*. The second distinction depends on whether the NDVs are aimed at civilian targets (population centres and industry) or at military targets (opposing missile sites and bomber bases). Weapons aimed at civilian targets are said to be *counter-value* weapons, because they attack the intrinsic economic and human resources of the country affected. (They are also called *counter-city* weapons.) Weapons aimed at opposing strategic weapons—missiles or bombers—while they are still on the ground are called *counter-force* weapons. A counter-force first strike is thus an initial attack aimed at an adversary's strategic weapons, while a counter-value second strike is a retaliatory attack aimed at his cities or industries.

Finally, there is an important distinction to draw between the wider purposes to which strategic nuclear weapons are put. Since the advent of nuclear weapons, countries have sought both to deter their use by threatening retaliation in kind and to reduce the injury which they could cause if they were used. In practice, they have found it necessary to consider these two objectives separately and to place them in some order of priority, partly because the combination of weapons most useful for one purpose often differs from the combination most appropriate to the other. Separate terms have therefore been found to describe the purposes of retaliation, on the one hand, and restricting damage, on the other. The former is called 'assured destruction', and has been defined as the infliction of an unacceptable degree of damage upon an aggressor, even after absorbing a surprise attack. The latter is called 'damage limitation', and might be defined as the minimization of the injury which a nuclear attack could cause if deterrence were to fail. The difference between 'assured destruction' and 'damage limitation' is a difference of use and purpose, rather than a difference between types of weapon. Although many strategic weapons are more appropriate to one purpose than to the other, most of them are potentially adaptable to both.

III. TASKS AND METHODS

The task of an offensive missile, as of any other offensive weapon, is to reach a specific target and to deliver a blow of sufficient force with sufficient accuracy to cause a prescribed degree of damage. In examining the utility of an offensive nuclear weapons system, the two critical elements are, therefore, the ability to reach the target area and the ability, having done so, to deliver a big enough warhead accurately enough to cause the required damage.

The task of any defence against a nuclear missile attack is to prevent the attacker from causing greater damage than the defender is prepared to tolerate. The defence may accomplish this by preventing offensive missiles from being fired, by intercepting them in flight or by providing means of reducing to an acceptable level the damage they can cause when their warheads explode.

There is a constant and dynamic interaction between offensive and defensive tasks. Measures taken by the defence to intercept offensive missiles interact with the development of offensive techniques for reaching the target. Measures taken to improve the yield or accuracy of offensive warheads interact with defensive measures to 'harden' potential targets against their effects.

In the interaction between offence and defence, it is of paramount importance to both sides to have reliable information concerning the capabilities and actions of the other. Planning the procurement of an offensive or defensive missile force must depend upon having adequate information about the forces deployed by any potential adversary, including information about testing programmes as well as about operational deployment. Beyond that, if a nuclear exchange should take place, a defence, to be effective, must have adequate warning of a missile attack and adequate information about it. Similarly, plans for a successful attack may be negated if information about defensive deployments or developments on the other side is inadequate.

For these reasons, developments in the techniques of intelligence gathering and analysis may be of just as much importance to the strategic relationship between offence and defence as changes in the characteristics of weapons themselves. Information gathered by reconnaissance satellites, by radar and electronic surveillance or by visual observation makes a critical contribution to the planning of strategic offensive and defensive forces. These means would have a still more vital part to play were a nuclear attack ever to be launched. The development of efficient reconnaissance satellites, of equipment capable of detecting the launch of strategic missiles and tracking their course and of rapid electronic or mechanical means of collating, analysing and disseminating the large quantities of data collected has made a contribution to the development of strategic systems during the last twenty-five years which can hardly be over-estimated. Indeed, without that contribution, work on more advanced propellants, guidance systems and nuclear warheads would have been wasted. It is not too much to say that the most effective arms-control measure which could have been adopted during the last quarter of a century might have been to limit the development of the digital computer.

If we assume that adequate information is available to both sides, the tasks of the offence are relatively simple; its performance is limited only by the technical capabilities of its weapons when pitted against the defensive measures of an adversary. The defence, however, faces a more difficult choice between three basic strategies: to prevent an attack by pre-emption, to intercept an attack in the air or to absorb an attack on the ground.

Pre-emption means that the defence chooses to seize the initiative by launching a counter-force first strike against an opponent's missiles before they can be fired. As a defensive measure, a counter-force first strike marks a decision that deterrence by the threat of intolerable retaliation has failed. Even though its purpose may be thought of as defensive, it is therefore to be considered more properly as a form of at-

tack. Indeed, of all types of attack, it is the one which demands the highest reliability in performance. A retaliatory second strike is intended, by definition, to exact a penalty for previous action. Any penalty exacted is a net gain to the side launching the second strike. In the case of a counterforce first strike, however, the assumption must be that the action will itself attract a retaliatory penalty, the scale of which will be conditioned, in large part, by the success of the first strike itself. *Prima facie*, therefore, any degree by which the success of a first strike falls short of 100 percent must be considered a potential loss to the side launching it.

Intercepting an attack means the deployment and use of an ABM system. This is known as *active defence*. Countering it entails finding means of evading or penetrating an ABM system. The offence may be able to evade the defence by firing only at undefended targets or by taking undefended routes to its objectives. If this is impossible, the defence must be confronted and overcome.

Absorbing an attack means either removing the targets in question from offensive reach or protecting them *in situ* against the effects of nuclear explosions. In either case, this tactic, which can be called *passive defence*, is intended to deprive the attack of its prey. Countering it entails either extending the reach of the offence or achieving such a favourable relationship between the yield and accuracy of offensive warheads that the static protective measures adopted by the defence are overwhelmed.

From this summary, two main areas of interaction between offence and defence emerge for consideration:

—the interaction between active defence and offensive penetration;

—the interaction between passive defence and the yield and accuracy of offensive weapons.

The former involves the competition between ABM systems on the defensive side and specialized re-entry systems on the offensive side. The latter involves pitting defensive measures, such as shelters for people and blast protection or mobility for missiles, against improvements in the yield or accuracy of offensive nuclear warheads. One area is concerned with whether offensive weapons can reach their targets, while the other is concerned with what they can accomplish if they do.

IV. ACTIVE DEFENCE AND OFFENSIVE PENETRATION

Defensive methods

A great deal of technical progress has been made since work on the development of ABM systems began in the mid 1950s. The essential problem, however, remains the same: to intercept one missile with another missile and to explode a charge in the vicinity of the former which is sufficient to destroy or to disable the warhead. In order to accomplish this, defence must have adequate warning of the approach of an offensive missile, must be able to reach it swiftly and must thereafter be able to destroy or disable it. The ability to detect, identify and track an incoming missile attack is a function of information technology. The ability to intercept it is, in addition, a function of missile technology. The ability to destroy an offensive warhead is, to a large extent, a function of defensive warhead design.

INFORMATION

The detection of an offensive missile launch is a task for sensors, passive or active. A passive sensor, in this connection, is one which receives and identifies phenomena produced by the offensive missile itself. A missile, for example, has a plume of flame at the exit from its rocket motors which radiates strongly in the infra-red band of the spectrum. A passive infra-red sensor will be able to detect this radiation and communicate its findings to a defensive system. An active sensor is one which must radiate energy itself in order to obtain evidence. The obvious example of such a sensor is a radar set, which sends out pulses of radio waves in order to receive back their reflections from solid objects.

Passive sensors are potentially of considerable value in detecting offensive missile launches. One of their limitations, however, is that infra-red sensors, in general, operate on a line-of-sight basis. In order to detect a missile during its boost phase, when the rocket motors are burning, the sensor must therefore be close to or over the territory of the launching state. In practice, this means that the sensor must be mounted on a space satellite platform. When so mounted, an infra-red sensor may have some advantage over a radar sensor, since the infra-red radiation of a missile is detectable, and may be identifiable, from the moment of launch, whereas the radar image of the missile may be difficult to distinguish from the ground reflections until somewhat later in its flight. Detection apart, however, the ability of an infra-red sensor to track and predict the flight path of the missile is severely limited in comparison with that of radar.

In many ways, radar of the type which emerged from World War II provides an admirable means of tracking a moving object such as a ballistic missile. Once its narrow beam of radio signals has been reflected back from the missile to the radar receiver, the beam can be locked on to the missile and the radar slowed in order to follow the missile's course. This technique suffers, however, from two serious disadvantages. In the first place, radar of this conventional type is a line-of-sight system. In other words, it cannot see around corners, including a 'corner' of the type created by the curvature of the earth. This means that a ground-based radar must wait until an object such as a missile has risen above its horizon before it can detect it and begin to track its course. In the second place, a radar of the World War II type sends out only a single beam of energy. Once it has been committed to the tracking of a single missile, it is impossible for the radar to switch its attention swiftly or effectively to other missiles in the same attack pattern. Because of this, no radar system based only upon individual, mechanically steered antennae can hope to cope with a multiple missile attack.

The first of these disadvantages can be offset, to some extent, by raising the radar transmitter above ground level in an aircraft or a space satellite. Aircraft platforms are of limited utility for this purpose, because they cannot fly high enough to extend the radar's horizon by any significant amount, but satellite platforms offer much greater advantages, and the use of satellite-based radars for missile tracking is one of the developments of most interest in the near future. Meanwhile, the limitations of line-of-sight radar have been partially offset by the development of over-the-horizon (OTH) radar. This system relies upon the fact that a body, such as a missile, passing through the ionosphere causes a disturbance which can be detected by radar waves of particular frequencies bounced between the ionosphere and the earth to special receivers.[1] By this means, a disturbance of the ionosphere can be detected even when it is below the line-of-sight horizon of the radar. OTH radar cannot, however, track the course of missiles whose passage through the ionosphere has been detected, although it may be able to give a rough indication of the general direction in which they have been launched.

The second disadvantage of conventional radar—the inability to change the direction of the beam quickly enough to cope with a multiple missile attack—stood for many years as one of the principal obstacles to the development of effective ABM systems. By about 1963, however, a new type of radar had been designed which has since reduced that problem to insignificance. This system, which is known as a phased array radar, dispenses completely with mechanical means of steering the radar beam. Instead of the conventional single antenna, with its own reflector, a phased array radar consists of a large flat face in which are mounted numerous separate antennae, each transmitting a radar beam in a constant direction. The directions in which the thousands of antennae on a single face transmit their beams are organized to provide extremely flexible coverage at a considerable range. A missile detected by one part of this composite beam is handed over, by a process of electronic switching, to other parts of the beam's capacity as its course passes through the field of coverage. The first part of the composite beam is then free to pick up further missiles. In this way, a very large number of missiles can be detected and tracked by the beams of a single face. Supported by extremely high speed switching and computing equipment, the phased array radar, even though subject to the line-of-sight limitation, can thus make it possible for the first time for a ballistic missile defence system to cope with the approach of a large scale missile attack.

From whatever source the information about a missile attack may come, it is of no use to the defence unless it can be swiftly collated and effectively analysed. There is a dominant requirement, then, for high speed and high capacity computers, without which no ABM system would be possible. Indeed, so swift is the reaction required of a missile defence that computers must be used not only to analyse information about the attack but also to prepare, fire and guide the defensive missiles until they have intercepted their targets.

All types of static information equipment—radars, computers and communications links—are extremely fragile. Apart from the general fragility of electronic components, no installation, such as a radar set, which relies on transmitting waves of energy can be protected by any material which is not transparent to such waves. This fact seriously limits the intrinsic 'hardness' of the radars in an ABM system. These radars, on which the whole operation of the system depends, thus become attractive targets for an attacker, as do other electronic components of the defensive detection, command and control systems. One essential purpose of an active defence must therefore be to protect its own nerve centres.

MISSILES

An offensive strategic missile passes through three phases during its flight. The first is the boost phase, during which the missile is thrust upwards from its launching pad by the rocket motors of the propulsion system. The second phase—the mid-course phase—begins when these motors have burned out. The remainder of the missile continues upwards for some way, without power, until the force of gravity overcomes the impetus given by the rocket motors. It then begins to fall back to earth, pointing at its target and following a ballistic path. Finally, as its downward course approaches the upper limit of the earth's atmosphere, it enters the third phase of its flight, known as the terminal phase. In the case of an ICBM, the boost phase lasts 3–5 minutes, the mid-course phase about 25 minutes and the terminal phase 1–2 minutes.

In theory, it would be possible for a defensive missile to intercept an offensive vehicle during any of these three phases. In practice, the ballistic missile defence systems now being deployed are limited to interception during the later part of the mid-course phase and the whole of the terminal phase.

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Means of intercepting offensive missiles during the boost phase or during earlier parts of the mid-course phase have been, and are, under study, but none has yet proved practicable.

The transition from mid-course phase to terminal phase can be considered to take place at the moment when an offensive vehicle reenters the earth's atmosphere. A defensive missile intended to carry out an interception during the mid-course phase is therefore described as an exo-atmospheric interceptor, while one intended to intercept during the terminal phase is described as endo-atmospheric. Exo-atmospheric interception requires missiles of considerable range, equipped, as we shall see, with explosive warheads of a particular type. It has the advantage of defending a wider area than a shorter range system. Against this, it requires the maximum possible warning time for the missiles to reach the altitude of interception. Endo-atmospheric interception demands missiles with extremely high acceleration and with good accuracy. Without the former, no interception would be possible. Without the latter, the defensive warhead might have to be so large that it would cause damage on the ground when it exploded at a relatively low altitude. An endo-atmospheric system has the advantage that it is more likely to be fired only against valid targets.[2] In its nature, however, it is a last ditch defence. If it fails, no further active defensive measures are possible.

The design of an exo-atmospheric defensive missile is basically similar to that of a strategic offensive missile (ICBM, IRBM or MRBM). In order to have sufficient range and a heavy enough punch, it will almost certainly have to be a multi-stage launcher equipped with a large nuclear warhead. It must be capable of swift reaction, and a solid or storable liquid propellent is therefore mandatory.

The design of an endo-atmospheric defensive launcher is a more complicated matter. In order to intercept at a sufficient altitude during the extremely short reaction time available, it must be capable of quite unusual acceleration. This means that it must be fired from its silo by an explosive charge or by some other auxiliary force and must be equipped with motors which are thereafter capable of building up very rapidly to their maximum thrust. Moreover, its construction must include advanced materials capable of withstanding the high friction temperatures generated by this acceleration within the atmosphere.

Once fired from its launching site, an exo-atmospheric missile, like an endo-atmospheric missile, can be guided in any direction. Because this flexibility, coupled with its long range, enables it to protect a relatively large area, an exo-atmospheric missile is often called an area defense missile. An ABM system made up of such missiles is called an area-defence system. An endo-atmospheric missile, with its much shorter range, can only protect a single target area. It is therefore often called a point defence (or terminal defence) missile, and a system of such missiles is called a point-defence system. Area defence and point defence missiles can each engage incoming offensive vehicles within areas of the sky, dictated by their range and speed, the horizontal limits of which can be drawn on the ground below. This terrestrial reflection of its maximum coverage is known as the missile's 'footprint'.

WARHEADS

Both exo-atmospheric and endo-atmospheric defensive missiles must deliver nuclear warheads. Ideally, there would be advantage in equipping endo-atmospheric interceptors with conventional high explosive warheads, in order to minimize the risk of damage on the ground, but the accuracies obtainable have not so far been great enough to permit this.

The general effects of a nuclear warhead exploded within the earth's atmosphere are well enough known from the literature about nuclear weapons.[3] The warhead delivered by an endo-atmospheric interceptor depends for its effectiveness upon these common characteristics, which include the effects of blast, of electro-magnetic radiation (including heat) and of nuclear radiation. In other words, the warhead of an endo-atmospheric interceptor may destroy an incoming offensive warhead by blasting it to pieces, by burning it up or by so irradiating it with atomic particles, such as neutrons, that it is disabled.

The characteristics of exo-atmospheric atomic explosions are less well known. Outside the atmosphere, the effects of blast can be disregarded, since for all practical purposes there is no material through which shock waves can be transmitted. To all intents, this also applies to the effects of thermal radiation (heat), except within the fireball of the explosion itself. Outside the atmosphere, therefore, a defensive nuclear warhead relies for its effectiveness principally upon radiation in parts of the electromagnetic spectrum other than the thermal area. Any nuclear explosion yields a very high proportion (60 to 75 per cent) of its energy in the form of X-rays. Within the atmosphere, these X-rays are absorbed in an extremely short distance by the molecules of the atmosphere and are, in part, transmuted at the point of absorption into thermal energy or heat. Indeed, the distance which they travel at sea level before adsorption can be measured in inches. Outside the atmosphere, however, there is effectively no material capable of absorbing this X-ray radiation, which therefore expands from the explosion over extremely long distances without losing its intensity.

X-rays themselves vary considerably in frequency. High frequency (shorter wave) X-rays are known as 'hard', whereas those of lower frequency (longer wavelength) are known as 'soft'. If X-rays from an exo-atmospheric explosion encounter some material object, the energy which they carry is transmuted within that object into a form of thermal energy. This effect is particularly strong in the case of 'hard' X-rays, the proportion of which can be increased by the careful design of powerful, thermonuclear warheads with yields in the megaton range. If the X-rays—and especially the 'hard' X-rays—from a larger explosion of this type outside the atmosphere encounter an incoming offensive warhead while their own intensity is still sufficiently high, they will implant so much thermal energy in the materials of the warhead itself that many of them will, as it were, explode from within. Some materials, and especially some materials used in electronic equipment, are more susceptible than others to this effect. One of the main objectives of planning an exo-atmospheric defensive system is therefore to design a large nuclear charge which, when exploded sufficiently close to one or more incoming warheads, will saturate them with enough 'hard' X-rays to destroy the electronic circuits and other components on which their successful operation depends. An offensive warhead so affected becomes an inert mass of material, incapable of exploding when it reaches its target. The potential of this X-ray effect, and especially the very long range over which it can operate, offers a large part of the attraction of exo-atmospheric systems of interception.[4] Without it, exo-atmospheric interception would demand a quite unrealistic degree of accuracy.

Offensive methods

There are two main components of an offensive ballistic missile: a propulsion system and a reentry system, the latter consisting of a nuclear warhead, with control and firing mechanisms, protected by an ablative heat shield from the very high temperatures generated during reentry into the earth's atmosphere.

In ballistic missiles which have already been deployed, the re-entry system can be taken to have no propulsive ability of its own. After separation, it follows a ballistic path, as though it were a ball thrown into the air, with no power to alter either the basic direction or the initial velocity imparted to it at the moment of separation. Its accuracy depends almost entirely upon the efficiency with which the propulsion system has performed.

In the past, provided that the propulsion motors operated with the designed efficiency, the re-entry system of an offensive missile could have been reliably expected to arrive in its target area. The rate of mechanical failure during the mid-course and terminal phases would certainly have been extremely low. The introduction of ABM systems, has altered this calculation drastically. Even if the propulsion system operates with complete success, the designer of an offensive missile, in order to ensure that the re-entry vehicle reaches its target, must now provide means of overcoming an ABM defence.

An attacking force, if it cannot fly around a ballistic missile defence, can seek to penetrate it in one or more of three basic ways. It can neutralize the defence by making it either impossible or irrelevant for defensive missiles to be fired at it. It can deceive or mislead the defence, by prompting it to fire at non-existent or unimportant targets. It can exhaust the defence, by presenting it with so many different targets that, once all the defensive missiles have been fired, enough offensive warheads survive to destroy the targets.

NEUTRALIZATION

A ballistic missile defence might be neutralized by mounting a successful preliminary attack upon its radar installations or control centres, both of which are relatively 'soft' targets.[5] The attraction of this tactic may be diminished, however, if the targets in question lie within the coverage of the defensive missile system.

Alternatively, an attacker may attempt to neutralize a ballistic missile defence system by 'blinding' its radars. A nuclear explosion at a very high altitude, even outside the atmosphere itself, has the effect of establishing a large area of ionized particles which act, in relation to a radar system, as an opaque cloud.[6] This cloud will absorb or refract radar beams in such a way as to make it difficult, if not impossible, for many types of defensive radar to detect or track offensive warheads approaching from the other side of the cloud. An attacker may therefore choose to launch a preliminary attack, the objective of which is to establish this 'blackout' effect and thus to screen a subsequent wave of offensive missiles from the radars of the defence. This is one form of what has been called a 'precursor attack'.

A third way in which an attack may neutralize an ABM defence is by giving it so little warning of the attack that, although the spatial coverage of the defensive system's missiles has not been evaded, they cannot be fired effectively in the time available. In practice, this means that the attacker must avoid defensive radar surveillance until a late stage in the flight of the attacking missiles. Radar coverage cannot be complete, either vertically or horizontally. A mobile offensive system, such as a submarine, may be able to launch its missiles from a direction which the defensive radars are unable to cover. A static offensive system may also, conceivably, be able to launch a missile which will approach the target area from a unexpected angle.[7] As an alternative, offensive missiles fired from static or mobile launchers may be designed to fly in under the floor of the defensive radar

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coverage, at too low an altitude for successful detection and tracking.

Finally, a defensive system may be neutralized by providing the attacking warheads with their own means of protection against the explosion of ABM warheads. The 'hardening' of offensive warheads has become an important area of research. Careful selection of materials for the warhead components, coupled with the provision of suitable protective shielding, can significantly reduce the vulnerability of a warhead to the effects of a nuclear explosion. In particular, it can reduce its vulnerability to the X-ray effect generated by an exo-atmospheric explosion.

DECEPTION

Misleading a ballistic missile defense is a matter of presenting the defensive radars with what appears to be a legitimate target (that is, an incoming warhead) but is, in fact, something quite different. Outside the earth's atmosphere, this is, in theory, a comparatively simple affair. An offensive missile may, for example, release balloons with a coating which will reflect radar waves in such a way as to look, on a radar screen, like warheads. Alternatively, it may release a cloud of light reflective objects ('chaff') which the defensive radar will be inclined to read as a solid object. Inside the earth's atmosphere, the problem of misleading defensive radars becomes more difficult. The atmosphere has the effect of retarding light bodies, such as balloons or 'chaff', more quickly than heavy bodies, such as live warheads. It is a comparatively simple task, therefore, for the defensive system to distinguish between the light decoys which have been effective outside the atmosphere and the warheads which they have been designed to conceal. Within the atmosphere, misleading the defensive radars becomes a matter of presenting them with decoys which have all the external characteristics of live warheads but which are, in fact, inert. Such decoys, to be convincing, must, of course, display not only the characteristic mass of a live warhead but also the shape or 'crosssection' which it makes when detected on a radar screen.

Attempts to neutralize or to mislead a ballistic missile defense may be supplemented by various electronic counter-measure (ECM) devices carried in the offensive vehicle. These may be designed to "scramble" the radar signals of the defensive system or to provide it with misleading information.

EXHAUSTION

The whole area of neutralizing, misleading or confusing ballistic missile defense systems has been explored extensively by the nuclear weapon states. For obvious reasons, very little information about the results has ever been published. There is no doubt, however, that a country developing or deploying an effective offensive missile system in the 1970s will have to make full use of these categories of penetration aids ('penaids'). Even then, this use will be matched by efforts to improve defensive radar systems. Much has already been done, in response to the development of 'penaids', to make radars more accurate and more discriminating and to render them more effective, for example, in penetrating areas of intense ionization.

For this reason, one of the most attractive "penaids" will always be the tactic of exhaustion. Whatever counter-measures the defensive system may employ, it can always be exhausted by an attack which presents a larger number of targets than the defensive missiles can engage. To present this surplus of targets by deploying and launching more individual offensive missiles than the defence can cope with is expensive. Deploying so many additional missiles may also be highly provocative. It is largely for this reason that the major nuclear weapon states appear to systems which enable a single offensive missile to deliver several warheads at once. These multiple re-entry vehicles can be so spaced as they approach their target that the defence must engage each warhead separately with a defensive missile. In this way, a comparatively small number of offensive missiles may contrive to exhaust, and thus to penetrate, a comparatively heavy defensive system. Whether it can do so effectively will depend not only upon its ability to deliver a sufficient number of individual warheads but also upon its ability to separate the warheads from each other, in time and space, by amounts which are sufficient to make it impossible for the explosion of a single defensive nuclear weapon to destroy several warheads at once.

MULTIPLE RE-ENTRY SYSTEMS

The desire to exhaust a ballistic missile defence is not the only possible reason for equipping an offensive missile with a multiple re-entry system. It may be, for example, that several smaller warheads delivered within a given area can cause more damage than a single large warhead delivered in the centre of that area. This will not often be the case where the target is a small "hard" one, such as a missile silo, heavily protected against the effects of blast. But it could well be true in the case of large "soft" targets, such as population centers or industrial complexes. Indeed, multiple re-entry systems would almost always have such an advantage against "soft" targets if the choice were between delivering one large warhead or several smaller warheads with the same aggregate yield. However, the need to provide each separate warhead with a heat shield, as well as with separate control and firing mechanisms, seriously limits the weight of fissile material which the warheads in a multiple system can carry. For this reason, the total yield of the multiple warheads delivered by one missile will always be considerably less than the yield of a single warhead delivered by the same missile. How much less will depend upon the exact characteristics of the system and the number of multiple warheads which it contains, but the reduction in yield may well range from 40 to 80 per cent.

Another reason for adopting a multiple re-entry system may be to enable a single missile to attack more than one target at once. In order to do this, it is obviously necessary that the separation between the warheads and the yield of each of them should be sufficient to reach and to destroy the separate targets concerned.

If we ignore the use of closely spaced multiple warheads to increase the damage which one missile can cause to a single 'soft' target, it is clear that the question of separation is central to the design of a multiple re-entry system. Multiple re-entry bodies which are simply separated from the propulsion system after the latter has burned out, as though they were a single re-entry body, will tend to follow identical ballistic paths. Small deviations from that path may be secured, but the separation between the points at which the warheads reach the ground cannot ever be large. This method may, therefore, serve to increase the missile's effectiveness against a single 'soft' target but it will not be sufficient to present more than one target to an ABM system or to attack several widely separated targets on the ground. The effect will be as though a ball thrown into the air had broken into several pieces after leaving the hand. The points at which the fragments will reach the ground will all bear reference to the ball's original line of flight and its original target. In that sense, they will not be independently targeted.

There are several possible ways of achieving the wider separation needed to attack, or to present, independent targets. Longitudinal separation, along the axis of the missile's flight, could be achieved by securing some time interval between the release of the individual re-entry bodies. Assuming that the re-entry bodies thereafter followed normal ballistic trajectories, this would have the effect of spacing them out along a straight line which was that of the flight axis. Lateral separation could be achieved in a variety of ways. The individual re-entry bodies might be mounted within the re-entry system on what were, in effect, rails, arranged to point in slightly different directions. The re-entry bodies, even if released simultaneously, would then leave the re-entry system by running down their separate rails at somewhat different angles and would achieve lateral separation as a result. Alternatively, the re-entry system as a whole might be caused to rotate as it released the individual re-entry bodies, thus spinning them off in different directions by centrifugal force. Finally, the re-entry system as a whole might be mounted in a powered vehicle (a 'bus') which could be controlled and steered after separation from the booster in such a way that it was pointing in slightly different directions or moving at slightly different speeds when it released each of the re-entry bodies. Clearly, these different methods are not mutually exclusive. Any combination of them might be adopted in order to secure the particular longitudinal and lateral separation desired.

One point should be made quite clear. Nothing in any of these methods has the effect of making the warheads delivered by multiple re-entry systems arrive more accurately than those delivered by single re-entry systems. Indeed, the reverse may be true. Especially in the case of systems which release re-entry bodies sequentially, the effect of releasing the first body may be to alter the attitude and velocity of the carrier vehicle very slightly. Unless these alterations can be predicted with great precision, this will mean that the accuracy with which subsequent re-entry bodies are released and delivered will be somewhat degraded. It follows that the fears of multiple re-entry systems being able to attack "hard" targets, such as missile silos, with unprecedented accuracy are based not upon the multiple characteristics of the system but upon general improvements in the guidance and control—and thus in the accuracy—of re-entry bodies. The same fears would be justified even more clearly in the case of single re-entry systems equipped with similar guidance and control mechanisms.

There has been a tendency recently to draw a firm distinction between multiple re-entry systems which can achieve comparatively little separation between the impact points of the separate warheads and more advanced systems which are designed to achieve the much wider separation needed to attack separate "hard" targets. The former have been described as MRVs (Multiple Re-entry Vehicles), and the latter as MIRVs (Multiple Independently-targeted Re-entry Vehicles). A distinction exists, but it is one of limited utility and the way in which it has been employed tends to be misleading. It suggests, apart from anything else, that the warheads of a system which does not have the means of achieving wide separation are scattered at random in a general area as though they were the pellets of a shot-gun charge. In fact, however, it is theoretically possible to predict with some accuracy the individual impact points of these warheads. The important point is that neither those impact points nor the paths which the individual warheads follow from the moment of separation can be as far apart as in the case of more advanced re-entry systems which release their warheads at varying times or at varying angles from the original flight path of the missile. This distinction is an important one, but it is not well indicated by the use of the terms MRV and MIRV, especially as the former must logically include the latter. It is more useful to speak of a single category of Multiple Re-entry Systems (MRESs) and to ask

two questions about any particular system within that category:

Can the re-entry bodies which form the payload of a single missile present more than one target to an exo-atmospheric ABM system?

Can the warheads delivered by a single missile successfully attack several separate targets on the ground?

ORBITAL AND DEPRESSED TRAJECTORY SYSTEMS

We have already seen that one way of neutralizing an ABM defence is to take it by surprise. This means either travelling outside the horizontal limits of defensive radar coverage or sliding underneath its lower limits.

All ground-based radar has great difficulty in detecting objects flying towards it at very low altitudes. This is largely because of the so-called "ground clutter" effect, which confuses the radar image of the incoming object with other low-altitude images, ranging from flocks of birds to mountains. Great efforts are being made to develop radars which can overcome this problem. Meanwhile, one way in which an offensive vehicle may avoid defensive radar is by flying, throughout the time it is within radar range, below an altitude at which its image can easily be distinguished from the images of other objects. In practice, this option is so far only available to aircraft and to air-breathing cruise missiles. The latter have a good chance of avoiding radar detection during much of their flight because of their low altitude, but suffer from the disadvantages that they have comparatively short ranges and travel at comparatively slow speeds.

At present, no ballistic missile can hope to avoid radar detection completely by traveling below (or above) the vertical limits of defensive radar coverage. As we have seen, however, tracking radars are subject to a line-of-sight limitation: they cannot see around the curvature of the earth. Ballistic missiles fired at much lower angles than usual will consequently rise above the line-of-sight radar horizon at a later stage in their flight. The re-entry systems of such missiles still follow a ballistic path, but their path rises to a much lower height above the earth than the conventional path of an ICBM traveling on what is known as a minimum energy trajectory. Low-angle missiles of this kind are known as depressed trajectory missiles.

Because it is not fired at the optimum ballistic angle, a depressed trajectory missile requires more energy to reach the same range as a conventional ballistic missile. If still more power can be made available, the missile may be able to escape completely from the restrictions of ballistic flight. It may, in fact, be able to achieve what is called orbital velocity, which means the speed necessary to maintain a body in orbit, without assistance from the atmosphere and in defiance of gravity, during at least one complete revolution around the earth (i.e. about 15,400 n.m. per hour at 100 miles altitude). In other words, it may become an earth satellite.

It would, in theory, be possible to equip an earth-orbiting satellite with a missile armed with a nuclear warhead, and to launch that missile at a target on the earth's surface on command from a ground station after the satellite had completed several orbits of the earth. Apart from the fact that such a use of orbiting satellites would contravene the Outer Space Treaty, it would also be a highly provocative manoeuvre. Moreover, the orbiting satellites themselves would be highly vulnerable to destruction by defensive missiles in a time of crisis, since their flight paths would already have been calculated and predicted during earlier orbits. For these reasons, as well as for reasons of cost and effectiveness, no nuclear weapon state appears to have been attracted by the idea of such an orbiting weapon in space. More interest has, however been shown in what has been called a Fractional Orbital Bombardment System (FOBS). This is a missile which achieves an orbital velocity but which fires a set of retro-rockets before the completion of one revolution in order to slow down its re-entry system and to drop the warhead which it carries into a normal ballistic trajectory towards a target on the earth's surface.

The principal advantage of a FOBS lies in the comparatively low altitude of its flight path. While a conventional ICBM reaches a maximum altitude of about 800–900 miles, the higher velocity FOBS will travel at an altitude of not more than about 100 miles above the earth's surface. In this way, it avoids the surveillance of line-of-sight detection radars for a considerable time. Over a typical inter-continental range, a line-of-sight radar at the target itself will give something like 10 minutes warning of an ICBM's arrival. With a FOBS, this warning time may be cut to as little as 3 minutes.[8]

To balance against this advantage of surprise, a FOBS suffers from two disadvantages. In the first place, the need for the missile's motors to have enough fuel to achieve orbital velocity severely limits the payload which can be carried. In the second place, the fact that a FOBS warhead, ejected from its lower orbit, must approach the earth at a somewhat flatter angle than the warhead of a higher altitude ICBM means that any vertical deviation from the planned flight path will have a comparatively larger effect on the accuracy with which the warhead is delivered.

To a lesser extent, missiles fired on a depressed trajectory enjoy the same advantage of surprise as a FOBS. Again, a line-of-sight defensive radar will not be able to detect the approach of a depressed trajectory missile until later in its flight path than is the case with a conventional ICBM. An ICBM fired in this way is known as a depressed trajectory inter-continental ballistic missile (DICBM).

Submarine-launched ballistic missiles may also be fired on depressed trajectories. By this means, a submarine system can take advantage of two potential assets: the asset of mobility, which enables it to fire from unexpected horizontal angles, and the asset of depressed trajectory, which enables it to fire its missiles at angles low enough to avoid defensive radar coverage for a large part of their flight. Current SLBMs are, in any case, fired over shorter ranges than land-based ICBMs, and therefore reach a lower apogee even when fired at an optimum angle. When fired on depressed trajectories, SLBMs could travel at such low altitudes that a defensive radar system might have only about 3 minutes warning of their approach.

V. PASSIVE DEFENCE AND OFFENSIVE DESTRUCTIVE POWER

Defensive methods

Several countries have given sporadic attention to the problem of protecting civilian population, civilian industry and vital administrative centres against the effects of a nuclear attack. How effective any of these measures would be in practice, especially in the case of a surprise attack, is open to doubt. More consistent thought has been given to the protection of strategic forces themselves against the effects of a nuclear attack. The protection of static land-based missiles against blast and the provision of mobile missile systems have been subjects of heavy expenditure during recent years by at least four of the nuclear weapon states.

MISSILE SILOS

The early generations of ICBMs and of other strategic missiles (IRBMs and MRBMs) were deployed on open launching pads, known as 'soft' sites. The missiles themselves being extremely fragile pieces of machinery, they were highly vulnerable to to the effects of a nuclear explosion anywhere in the general vicinity. Their vulnerability was all the greater because these early generations of missiles required liquid fuels which could not be stored inside the vehicle. This meant that there had to be a considerable internal for fueling between the warning of an attack and the moment at which the missile could be launched. They were thus very likely to be caught on the ground and destroyed by a surprise attack of any size.

As the improvement in missile accuracies made this problem more acute, both the United States and the Soviet Union began to explore ways of protecting their missiles against the effects of a nuclear attack. The principal method adopted by both in the case of static missile systems was to emplace the missiles in strong underground silos. These were constructed of reinforced concrete which could withstand very strong blast shocks without the missile inside the silo being disabled.

The accuracy of missile systems has continued to improve, until missiles emplaced in hard silos of existing patterns are again considered to be vulnerable to a surprise attack. The silos provided for the United States land-based ICBM force, for example, are capable, on the average, of withstanding a blast of about 300 pounds per square inch over the normal atmospheric pressure (300 psi overpressure). That level of protection is inadequate, however, against the surface explosion of a 1 MT nuclear weapon 2,200 feet away. Such an accuracy is well within the reach of proposed systems.[9]

One possibility, in these circumstances, is to harden missile silos still further. By strengthening their construction and by sinking them into natural layers of hard rock, rather than earth, it would, in theory, be possible to provide protection against a blast of anything up to 3,000 psi overpressure. This would be enough to preserve the missile inside the silo from all but a very near miss. Beyond a certain point, however, consideration of blast effects alone becomes irrelevant. A 1 MT nuclear explosion, on a surface of ordinary soil will pile up debris over an area which extends about a quarter of a mile from the point of the explosion. Any missile silo within that circle will almost certainly be unable to eject its missile once the debris has been deposited.

Another possible way of preserving emplaced missiles against the effects of a nuclear attack is, of course, to fire the missiles as soon as warning of the attack has been received and before the attacking warheads can reach the earth. At least in public, this tactic, which is known as 'launch on warning', has repeatedly been rejected by the United States Government. It has to be remembered, however, that a public rejection of this sort may not carry complete conviction to a potential adversary. Any missile power considering a surprise attack upon another missile power must take into account a greater than zero probability that the latter will, in the event, decide to launch a retaliatory strike as soon as it considers that persuasive warning of an attack has been received.

MOBILE SYSTEMS. Unless a country is prepared to adopt a policy of 'launch on warning', there are clear limits to the degree of passive defence which can be provided for static missile systems. There is no apparent limit to possible improvements in the accuracy of strategic missiles. It has, indeed, been suggested that future re-entry systems may be able to place a satchel charge on the silo door of a missile site. Against such accuracy, no static measures of passive defence have much chance of success. Attention has therefore switched increasingly to the advantages of mobile missile systems which will not offer such an easy target for surprise attack.

The original delivery vehicle—the bomber aircraft—is itself a mobile system. Equipped with stand-off ASM missiles and effective means of confusing, evading or suppressing

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air defence systems, the strategic bomber is still a useful delivery vehicle. While on the ground, however, a strategic bomber force presents an even easier target for surprise attack than a static missile force, since much less accuracy is required to hit a bomber base than a missile silo. In order to be able to exploit its advantage of mobility, a strategic bomber force must therefore have its own means of surviving a first strike. This means dispersing the force to a large number of bases, in order to present the greatest possible number of targets, giving it the maximum possible warning of missile attack and keeping a large proportion of the force at a state of readiness which will permit it to take off before the attacking missiles can arrive. As in the case of other defensive measures, adequate and swift intelligence concerning an offensive missile launch is of vital importance.

Another way of procuring a mobile force which can better withstand a surprise attack is to take land-based ICBMs out of their silos and to place them on mobile launchers. This would have been almost impossible with the earlier generations of ICBMs, which required liquid fuels to be pumped into them before they could be launched. Solid-propellent missiles, which are ready for launch at any time, make the prospect of mobile ICBMs more attractive. So far, however, no country has deployed mobile land-based ICBMs, although mobile launchers for shorter range missile systems have become a commonplace.

Without doubt, the most important mobile offensive missile system is the submarine. Its advantages are obvious. It is extremely hard to detect and even harder to track and destroy. It can move with considerable freedom around the sea frontiers of a target country and, equipped with missiles of adequate range, can mount its attack from any one of an extremely large number of launch points. Against this, the accuracy with which its missiles can be delivered depends heavily upon the accuracy with which the submarine itself can be navigated. Navigation of unprecedented precision has been made possible by the development of navigation satellites, but it is still the case that the accuracy of submarine-launched ballistic missiles is inherently less than that of land-based ICBMs. Another possible disadvantage is that, like the strategic bomber aircraft, the missile submarine is vulnerable while within its base area. Nuclear propulsion, however, has provided such long endurance that a large proportion of any submarine force can be kept in firing position all the time. All in all, the ballistic missile submarine is the most convincing means so far found of providing what is, in effect, a passive defence against a first strike.

Hard silos on the ground, strategic bomber aircraft in the air and missile submarines at sea all provide different versions of passive defence. With this range of alternatives available, both the largest nuclear weapon states have recognized the advantages of diversification. To rely on any one version of passive defence alone would render the country concerned vulnerable to a technical breakthrough or even to a particular form of surprise attack. Although they have given different priorities to the three environments, both super-powers have therefore been inclined to maintain strategic forces on the ground, in the air and at sea. In present circumstances, it would be quite impossible for either to destroy all three elements of the other's force in a surprise attack. A retaliatory ability would therefore survive. In this sense, the diversification of strategic forces is itself an aspect of passive defence.

Offensive Methods

The direct counter to an improvement in passive defence, at least in the case of static targets on land, is an improvement in the yield of an attacking warhead, in the accuracy with which it can be delivered or in both yield and accuracy at once.

The relationship between the yield and accuracy of a nuclear warhead is of critical importance. About half the energy released by a nuclear explosion on the surface of the earth is converted into blast or shock waves. These are naturally attenuated by distance. The blast from a weapon of a particular yield exploding a short distance away will be as great as the blast from a weapon of higher yield exploding further away. There are mathematical laws, called scaling laws, which govern the relationship between yield and distance. The important point about them is that the effect of varying the distance from the point of explosion is much greater than the effect of varying the size of the explosion itself. To be more specific, a given amount of blast, measured in pounds per square inch (psi) of overpressure, will occur at a distance from an explosion which is proportional to the cube root of the energy yield. Roughly speaking, this means, that doubling the yield of a nuclear explosion will increase the blast at a particular distance by about two-thirds, whereas halving the distance will increase it by about four or five times.

The implications of this are obvious. It means that the success of a nuclear attack depends more heavily upon the accuracy with which the weapon is delivered than upon the size of its yield. To take an example, the blast from a 100 KT weapon exploded on the surface half a mile away from a target will exert a pressure on that target of about 32 psi over the normal pressure of the atmosphere. Doubling the yield of the weapon and exploding it at the same distance from the target will increase the blast effect by about 63 per cent. But halving the distance between the explosion and the target while maintaining the yield at 100 KT will increase the blast effect by about 350 per cent. In other words, the dividend from doubling the accuracy turns out to be about 5½ times the dividend from doubling the yield. For that reason, it is important not to become over-impressed by the sheer size of nuclear weapon yields. Size is significant, but accuracy of delivery is normally even more significant.

Increasing the accuracy of offensive missiles depends upon developing more efficient guidance systems. The basic guidance mechanism for all strategic missiles has always been an inertial system. Once a re-entry system has been separated from its booster, however, there is little which any inertial guidance system can do to correct aberrations in its course. A warhead re-entering the earth's atmosphere is affected by atmospheric inconsistencies and by such natural phenomena as winds. For these and other reasons, it is intrinsically unlikely that any guidance system based only upon inertial techniques can achieve accuracies at an intercontinental range of much better than 0.25 n.m. CEP. In order to obtain a higher accuracy than this some form of terminal target-seeking guidance which can correct the course of the reentry system within the atmosphere is needed.

VI. THE SYSTEMS

Although most of this paper has deliberately been cast in general terms, it may be useful to give some details of specific systems which have already been deployed or which are under development.

In the case of defensive systems, the details given cover both active and passive defence. The emphasis, however, is on the former. In the case of the offence, the details have been confined to multiple re-entry and orbital systems. This should not be taken to mean that conventional, single warhead missiles are outmoded or are irrelevant to the penetration of an active defence, but only that their characteristics are considered to be well enough known from published literature.

Performance characteristics have been ascribed to most of the weapons mentioned. They should be read with caution. Governments are secretive about the characteristics of their own missile systems (although they are sometimes more loquacious about other people's). In many cases, therefore, first-hand information is not available. In others, estimates of performance vary within remarkably wide margins. This is hardly surprising. It is difficult for a country to extrapolate reliable operational performance statistics about its own missiles from test data alone. It is even more difficult to extrapolate such statistics about the missiles of other countries from surveillance of their testing programmes. Finally, it is very difficult indeed to assess, from design specifications alone, the operational performance of a missile which has not been fully tested at all Estimates based on design specifications will often be more favourable than those based upon test data. Above all, the standards set in testing may not be achieved if a system is ever used operationally.

This element of uncertainty is more important in the case of some weapon characteristics than others. An error of a factor as large as two in the estimate of the yield of a nuclear warhead may not be particularly important in the particular context of its use. Such an error in the accuracy of an offensive missile would, however, be of very great importance indeed since, as we have seen, the effectiveness of such systems, especially against 'hard' targets, is critically dependent upon their accuracy. Figures for the accuracy of offensive missiles should therefore be read with particular caution.

No figures have been given for the reliability of individual missiles, largely because reliability statistics based upon test data are more than usually subject to degradation in operational conditions. As a rough guide, however, it can be considered that between 70 and 80 per cent of both United States and Soviet ICBMs and SLBMs would perform as designed.

Defensive systems

United States Systems

No active ballistic missile defence has yet been deployed by the United States. Work has been going on since the early 1950s, however, on the development of ABM radars and missiles. Initially, this work centred around a longer range version of the Nike system of air defence missiles, known as Nike-Zeus, which had a range of approximately 200 miles and was intended to operate in conjunction with a series of four mechanically slewed radars.[10] Although this missile showed its exo-atmospheric capability during live interception tests over the Pacific in 1962 and 1963, its range and power were barely adequate for a genuine area defence, while the system as a whole suffered from the fatal disadvantage that its mechanically slewed radars could not cope with an attack by more than a very few offensive vehicles. Moreover, the system included no shorter range, high acceleration missile as a backup to the long range Nike-Zeus. It was decided, therefore, that three problems would have to be solved before an effective ABM defence could be deployed. The missile designed for exo-atmospheric interception (Nike-Zeus) would have to be given a considerably longer range. A shorter range missile would have to be designed for endo-atmospheric interception. Finally, some major improvement in radar technology would have to be made in order to cope with a multiple attack.

At least on paper, two of these three problems were solved between 1961 and 1963. A new, high acceleration missile known as Sprint had been tentatively designed for endo-atmospheric interception, while the de-

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velopment of phased array radars had at last made it possible to cope with a multiple attack. At that point, the Nike-Zeus programme was formally abandoned and a new programme was announced under the title of Nike-X. It remained to produce a longer range exo-atmospheric missile which would be genuinely capable of area defence. This third requirement was approached in 1964, when a programme was started to construct a much longer range interceptor together with a new warhead which would destroy incoming vehicles by the use of 'hard' X-rays. The missile, based on the old Nike-Zeus, was originally known as the DM15X-2 but has since been named Spartan.

The radars designed for Nike-X were all based upon the phased array principle. The intention was that attacking ICBMs should first be detected, at a range of some 2,000 miles when they were about ten minutes away and flying at an altitude of about 500 miles, by a very long range radar operating on a compratively low frequency and known as a Perimeter Acquisition Radar (PAR). At a certain point, the PAR would hand over the tracking to a shorter range but very high capacity radar known as a Multi-function Array Radar (MAR or to a slightly scaled down version known as a TACMAR. The MAR or TACMAR would, in turn, hand over the tracking task to a Missile Site Radar (MSR) at a DM15X-2 missile site. The MSR, with its ancillary equipment, would compute interception points, launch an appropriate number of the DM15X-2 missiles for which it was responsible, and guide the interceptors to their targets. If intercetpion with the DM15X-2 was impossible or unsuccessful, one or more high acceleration Sprint missiles would be fired, also guided by the MSR, to engage incoming vehicles within the atmosphere at a height of about 100,000 feet.

A great deal of effort was put into the development of specialized warheads for both DM15X-2 and Sprint. The former required a multi-megaton warhead which could create extremely intense "hard" X-rays outside the atmosphere. The latter required a very much smaller nuclear warhead, the detonation of which at a comparatively low altitude would not cause damage on the ground, to destroy incoming warheads by blast or neutron irradiation.

Despite pressure from the United States Army and from a number of Members of Congress, it was three years before any decision was taken to deploy a version of the *Nike-X* system. Finally, in September 1967, the US Secretary of Defense announced that a limited deployment was to be undertaken, under the title of *Sentinel*, ostensibly in order to counter an expected Chinese ICBM threat during the latter part of the 1970s. The *Sentinel* system was to consist of 15 missile sites in the continental United States, with additional sites in Alaska and Hawaii, together with six PAR sites along the Canadian border. Sixteen of the seventeen sites were to be equipped exclusively with *Spartan* (DM15X-2) missiles. The seventeenth, in Hawaii, would have only shorter range *Sprint* missiles. *Sprints* would also be deployed around the six PAR sites. Each of the seventeen missile sites would have its own MSR installation. (The restricted scale of the system and expected improvements in PAR and MSR performance made it possible to leave out the intermediate MAR or TACMAR radars.) The first missile site was to become operational in October 1972, and the system might have been fully deployed by 1975. It would then have provided a thin-area defense for the whole territory of the United States. This area defense would not, however, have been supported by any significant terminal defence, except around the six northern PAR sites. It would therefore have had little ability to cope with a heavy missile attack of the sort which the Soviet Union might have been expected to launch. Its capability was effectively restricted to a defence against light missile attacks, by China or by any other small nuclear power. However, it could clearly have provided the basis for the eventual construction of a much thicker system, with a capability against the Soviet Union. Indeed, one of the reasons for the location of the majority of the *Spartan* sites within urban areas was to permit the later co-location of *Sprint* missiles as elements in such a "thick" defence. Another option left open by the design of the *Sentinel* system was that of deploying *Sprint* missiles around *Minuteman* ICBM sites. Mr. McNamara, in fact, made this possibility explicit when he announced the adoption of the *Sentinel* programme in September 1967. Nevertheless, the general pattern of the *Sentinel* system, as originally described, was that of a "thin"-area defence designed to protect civilian population and industrial capacity against attack by a small missile force.

A major amendment of this principal purpose was revealed by President Nixon on 14 March 1969, when he announced the initiation of a new ABM programme to be called Safeguard. In many respects, the Safeguard system is no more than a new version of the Sentinel system. The missile and radar components are identical, including both Spartan and Sprint as well as PAR and MSR radars. The purposes and pattern of the deployment, however, have been heavily amended. Instead of the "thin" area defence of the whole country against attacks on population centres, industrial capacity and missile sites alike, Safeguard is to have as its first priority the defence of Minuteman silos. The provision of an overall area defence, especially against a Chinese attack, is explicitly relegated to a lower position in the order of priorities. The six PAR sites along the Canadian border designed for Sentinel are to be replaced by five sites in the same area. In addition, two PARs are to be located in the south-western and south-eastern United States, largely to provide warning of an attack by submarine-launched ballistic missiles (SLBMs). Moreover, four of the PARs are to be given additional faces in order to make them multi-directional. The fifteen Spartan missile sites which the Sentinel plan had proposed for the continental United States are to be replaced by twelve sites, each of which will have both Spartan and Sprint missiles in addition to its own MSR. Seven of these sites will be colocated with the PARs. None, with the exception of a site at Washington, DC, will be within urban areas. Above all, the first two sites to be constructed will be positioned to defend parts of two of the six principal areas of Minuteman deployment, at Malmstrom Air Force Base in Montana and at Grand Forks Air Force Base in North Dakota. Deployment at these two sites, with the construction of the five northern PAR sites, is to be Phase I of the Safeguard programme and is to be completed during 1974. The cost of Phase I, excluding the cost of the necessary warheads, is estimated at $2,100 m.

Three options are left open for Phase 2 of the Safeguard programme. Option 2A would involve adding two further Spartan/Sprint sites to protect the Minuteman fields around Whiteman Air Force Base in Missouri and Warren Air Force Base in Wyoming. It would also increase the number of Sprints and Spartans in the Phase 1 installations. Finally, it would establish a separate Spartan/Sprint site to protect the capital at Washington. The additional cost of Option 2A would be $1,300 m. Option 2B was designed specifically to counter a possible Soviet SLBM threat to United States strategic bomber bases. This option would involve the addition of two PARs, in Florida and California, and the establishment of an additional ten missile sites, bringing the total to twelve, at an extra cost of $4,200 m. over that of Phase 1. In addition to providing a defence of Strategic Air Command (SAC) bomber bases, this would have the effect of establishing again a thin-area defence of almost the whole continental United States. Option 2C would be designed to meet an increasing Chinese ICBM threat, in circumstances in which the Soviet SLBM threat to the United States bomber force was less than expected. Again, a total of twelve missile sites would be deployed, but the two PAR installations in Florida and California would be omitted and the MSR coverage would be less extensive. The extra cost of Option 2C over that of Phase 1 would be $3,900 m. If all three options under Phase 2 were to be pursued together, the total cost, including the Phase 1 cost, in terms of investment by the US Department of Defense, would be $6,600 m. In addition, there would be an attributable research, development and testing cost of $2,500 m. Finally, the development, testing and production of warheads for the system would cost $1,200 m. Altogether, therefore, Phases 1 and 2 of the Safeguard programme would cost the United States $10,300 m., spread over about eight years.[11] Expenditure on the operation and maintenance of the complete system, at 1969 prices, is estimated at $350 m. a year.

Few performance details of the missiles to be included in the Safeguard system have yet been released. It is known, however, that the long-range Spartan has an overall length of 55 feet, a three-stage, solid-propellent booster, a warhead giving a yield of several megatons and a range of about 400 miles. Each Spartan costs about $1.5 m. The short-range Sprint, which is fired from its silo by a gas-driven piston in order to give it initial acceleration, has a two-stage solid-propellent booster, an overall length of 27 feet, a diameter of 4½ feet, a range of about twenty-five miles and a warhead in the kiloton range. Each Spartan costs about $1.1 m.

Soviet systems

After what seems to have been a false start around Leningrad in 1962, based upon missiles and radars which proved inadequate, the Soviet Union began to deploy an ABM system for the defense of the Moscow area in about 1964–65. In November 1966, the U.S. Secretary of Defense admitted publicly that there was "considerable evidence" of such deployment. The system, which now consists of 67 missile launchers around Moscow, relies upon radars which are powerful but somewhat crude by American standards, together with a single missile, known in the West as the Galosh, which is designed for exo-atmospheric interception only. Galosh, with an estimated range of 200 miles, provides a "thin" area defense of Moscow and its surroundings. It is not, apparently, supported by any shorter range, terminal defense missiles. Nor has the system so far been extended to cover other areas of the Soviet Union. Nevertheless, Galosh, which is capable of delivering a multi-megaton warhead presumably with "hard" X-ray capabilities, gives the Moscow area a degree of protection which the United States purports to take seriously in assessing her own second-strike capability. The limitations of this restricted system have apparently, however, been recognized by the Soviet Union. The deployment of Galosh slowed down significantly during 1968 and has now, it seems, been almost suspended. In its place, the Soviet Union is reported to be testing a new generation of more sophisticated radars and a new long range interceptor missile.

While installing the Galosh defense around Moscow, the Soviet Union was also deploying another defensive missile system known as the Tallinn system from the place at which its components were first observed. This system, based upon a missile known in the West as the SA-5 Griffon, has been established in

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several areas around the perimeter of the Soviet Union. It is clearly designed only for endo-atmospheric interception, and the general view amongst Western experts is now that its primary, and possibly its only, role is defense against high speed, high altitude aircraft and ASMs. In theory, however, it would be possible to adapt such a system to perform a limited ABM function by associating it with more capable radar and control equipment. This, however, could also be said about other Soviet surface-to-air missile (SAM) systems such as the SA–2, as well as about United States SAMs such as Nike-Hercules and even Hawk.[12] Whatever longer term Soviet intentions may be in this respect. therefore, there is no evidence that their ABM defense consists at present of anything more than the Galosh deployment around Moscow.

FUTURE PROSPECTS

Research is continuing in the United States in an attempt to develop more capable components for later stages of the Safeguard system. In particular, attempts are being made to improve Spartan and Sprint. In the case of Spartan, these efforts have been directed towards providing the missile with greater range and with what has wrongly been described as a "loiter" capability. The latter, which should more properly be called a re-ignition capability, means enabling the missile to shut down its motors on command at some stage after launch and thereafter to coast briefly until a suitable target has been selected, at which point the motors are re-ignited. In the case of Sprint, the main effort has apparently been directed towards developing a version which can be fired from sites some way from the controlling MSR installation. The products of these developments—Improved Spartan and Remote Sprint—would presumably be used in Phase 2 of the Safeguard programme.

Looking further ahead, the advantages of intercepting an offensive missile during the earlier stages of its flight are considerable. During the initial boost phase, which lasts for 3–5 minutes, the missile, which is carrying a heavy load of fuel as well as its payload, is accelerating comparatively slowly and presents both an easier and a larger target. Moreover, interception during the boost phase or the early part of the mid-course phase would preserve the defending country from any risk that the detonation of its own warheads would either cause damage to its territory or "blind" is defensive radar system. Finally, multiple warheads would have no opportunity to separate widely from their booster or from each other. Early interception of this type demands, however, both longer warning of an ICBM or SLBM launch and the ability to maintain defensive missiles at some distance from the borders of the defending country.

Attention is therefore being paid to the possibility of positioning the components of an ABM system beyond the territorial limits of the United States. The United States Navy has proposed a system known as SABMIS (Sea-based Anti-Ballistic Missile Intercept System), which would install both tracking radars and missiles in surface vessels. In theory, given sufficiently powerful missiles this would permit the interception of ICBMs during the early part of their mid-course phase. Missiles which have been proposed for this purpose, include both *Spartan* and *Polaris*. At the same time, the United States Air Force has suggested a system known as ABMIS (Airborne Ballistic Missile Intercept System), which would install radars and missiles in C–5A transport aircraft. This would also permit the earlier interception of ICBMs. In addition, the ability of airborne radars to "look down" at missiles, over what would be the radar horizon of a land-based defence, might give this system an advantage against submarine-launched ballistic missiles.

The United States has embarked upon a number of more speculative research programmes, under titles such as Hibex and Upstage, designed to produce very advanced types of endo-atmospheric ABM missiles. Several of these programmes are co-ordinated under the name of Project Defender. Their intention is to develop sophisticated short range missiles, capable of extremely high acceleration and also of maneuvering in order to counter the evasive action which may be taken by later generations of re-entry vehicle.

Finally, there is the possibility of mounting an ABM system in earth-orbiting satellites. During the early 1960s, the United States, under the title of Project Bambi, examined the deployement of a large number of low altitude satellites armed with interceptor missiles for this purpose. The object would have been to detect and destroy offensive missiles very soon after launch. The project was abandoned in 1964, both on the grounds of expense, and on the more obvious grounds of its intrusive and provocative quality. It has been reported, however, that the US Department of Defense is again examining a proposal for a satellite-based missile defense system which would fire large numbers of solid, non-explosive darts to destroy offensive missiles shortly after launch.

There is no obvious reason why ballistic missile defence should always be based on the interception of one missile by another. One possibility, which has already been widely discussed, might be to use laser beams as a defensive mechanism. It it were possible to provide the very large quantities of energy needed for such lasers and also to develop lasers which combined adequate destructive power with a sufficiently quick reaction time, this method would have the advantage of almost instantaneous interception. Apart from anything else, a laser of this type could repair any error in its performance by firing again at the same missile. This tactic, which has been called "shoot-look-shoot", is one which it is difficult-although not impossible—to adopt in the case of missile interceptors.

In the field of radar technology, the United States has been concentrating upon obtaining longer warning of a ballistic missile or FOBS attack. At the moment, the Ballistic Missile Early Warning System (BMEWS) radars in Alaska, Greenland and Britain can give the United States about 20 minutes warning of the approach of conventional ICBMs within their coverage but have little precise tracking capability. The much newer OTH radars such as the System 440L can give even longer warning (up to 30 minutes) but have no tracking capability at all. The solution seems to be the installation of tracking radars nad passive sensors in earth satellites. Two systems have been proposed one based upon satellites in polar orbit and the other based upon satellites in synchronous orbit.[13] Operational tests of these are expected to begin in 1970, and a full system may be deployed by 1972. Once it is in place, it will be able, in theory, to detect and track any missile, ballistic or FOBS, from the moment of its launch.

Very little is known about ABM research programmes on the Soviet side. As already mentioned, the Soviet Union is reported to have embarked upon the development of more advanced ABM radars and also upon the development of a new exo-atmospheric interceptor with a re-ignition capability similar to that planned for Improved *Spartan*. Given this evidence of continued interest, it is surprising that there has not been any indication that the Soviet Union is also attempting to produce an endo-atmospheric interceptor missile on the lines of the American *Sprint*.

In the area of passive defence, the United States has carried out a major programme of providing fallout shelters (but not blast shelters) within existing civilian buildings, and has made some effort to prepare plans for the evacuation of parts of the population to safer areas in the case of nuclear war. The Soviet Union has also claimed to have elaborate plans for civilian evacuation in such a circumstance, capable of reducing urban population density by as much as a factor of ten.

As part of the passive defence of strategic forces, all United States ICBMs, both *Minuteman* and *Titan 2*, are already emplaced in underground silos hardened to withstand a blast of about 300 psi overpressure. With the exception of about 140 older missiles, Soviet ICBMs are also in underground silos which can be assumed to have the same protective capability. The United States has embarked upon a research project, known as the Hard Rock Silo (HRS) programme, to identify areas of natural rock formation in the United States suitable for the construction of underground missile silos and launch control centres. About twenty possible areas have already been identified. A missile silo constructed in solid and relatively unfaulted rock would have a theoretical ability to withstand blast pressures of between 1,000 psi and 3,000 psi overpressure. The difficulty of identifying areas with such a potential has apparently, however, been considerable. The process would also be extremely expensive: preliminary estimates of the cost of placing 1,000 *Minuteman* missiles in Hard Rock Silos range between $6,000 and $7,000 million. Nevertheless, protecting part of the United States ICBM force in this way would significantly increase its ability to survive a Soviet first strike, especially if the missile fields were also protected by an ABM system. Logically, this prospect might also attract the Soviet Union to emplace at least some of her own ICBMs in hard rock. There is no indication, however, that the Soviet Union is studying this possibility actively.

Offensive methods

United States Systems

(1) Polaris A–3. It seems to be widely believed that multiple re-entry systems are in general, new, untested and undeployed. In fact, a multiple re-entry system is fitted to the Polaris A–3 missile which is in service with both United States and United Kingdom forces and has been operational since 1962. The Polaris A–3 is a two-stage, solid-propellant missile with a maximum range of 2,500 n.m. (2,880 statute miles) and an inertial guidance system.[14] Its accuracy is likely to be about 0.8 n.m. CEP. Of the 41 United States Polaris submarines in service, 28 are equipped with the Polaris A–3 (the remainder having the A–2 model). Each of these submarines carries 16 missiles. In addition, the Polaris A–3 has been sold to the United Kingdom to equip the four British missile submarines which it is planned to deploy from 1970. The United States version of the Polaris A–3 is fitted with a multiple re-entry system which contains three separate warheads. The yield of these warheads has not been published but, from the total payload carried by the missile, it is reasonable to deduce that the yield of each warhead is in the neighborhood of 200–300 KT. The British version of the Polaris A–3 carries a re-entry system of British design which also contains multiple re-entry vehicles. The number of re-entry vehicles has not been revealed but it is likely that, like its American counterpart, it is capable of carrying three warheads. Both the British and American multiple re-entry systems for the Polaris A–3 are apparently designed only to enable a single missile to cause more damage to a single 'soft' target. Because of the limited separation obtainable, they would not be suitable for a successful attack with the payload of a single missile on more than one "hard" or "soft" target. (A 200 KT weapon with a CEP of 0.8 n.m. would in any case have less than a 5 per cent chance

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of destroying a 300 psi missile silo.) Nor could the warheads in a single missile present more than one target to an area defense ABM system.

(ii) Poseidon C-3. The United States intends to replace Poseidon missiles on 31 out of its 41 missile submarines with the Poseidon C-3, at an estimated total cost of about $7,000 m. The first flight test of the Poseidon missile took place in August 1968, and the testing programme is due to be completed during the summer of 1970. Although several submarines are already being converted to accept the Poseidon system, installation of the missiles themselves will not begin until the latter part of 1970. The first Poseidon submarines will be deployed operationally in early 1971, and deployment is due to be completed during 1974–75. The Poseidon C-3 has been designed to deliver a multiple re-entry system known as the Mark 3. This system, which will reportedly be capable of carrying at least 10 warheads, each having a yield of 40–50 KT, is of the steerable or "bus" type. In other words variations in the speed and direction of the carrier vehicle are used to eject the separate warheads on slightly different paths. This makes it possible to achieve a large degree of longitudinal and lateral separation between the warheads, both during flight and on impact. The extent of this separation has not been revealed, but it will certainly be measured in tens of miles. The Poseidon C-3 itself is a two-stage, solid-propellent missile with a maximum range of 2,500 n.m. (2,880 statute miles). Its guidance system is inertial and its planned accuracy is about 0.5 n.m. CEP. With that accuracy, a single 50 KT weapon would have somewhat less than a 5 per cent chance of destroying a 300 psi silo. However, there are plans, which have been temporarily delayed by budgetary difficulties, to install an improved guidance system during the later stages of the Poseidon programme of a type which will significantly improve the accuracy with which warheads can be delivered against "hard" targets.

(iii) Minuteman 3. The present United States land-based ICBM force consists of 1,000 Minuteman 1 and 2 missiles, in addition to about 48 Titan 2 missiles. It is intended to replace some 510 of the 1,000 with the Minuteman 3 system, at an estimated total cost of about $5,000 m. The first flight test of the Minuteman 3 missile took place in August 1968 and the test programme will be completed during the summer of 1970. Deployment will begin shortly after that date and will be completed during 1974–75. The Minuteman 3 is a three-stage, solid-propellent missile with a maximum range of about 6,850 n.m. (7,900 statute miles).[15] It has an inertial guidance system and a planned accuracy of 0.25 n.m. CEP. Minuteman 1 and 2 carry single warheads of 1–2 MT. Minuteman 3, however, will be equipped with a multiple re-entry system, known as the Mark 12, containing three warheads, each with an estimated yield of 170–200 KT. As in the case of the Mark 3 system for Poseidon, the Mark 12 is designed to release its warheads sequentially in slightly different directions as a result of changes in the velocity and direction of the carrier vehicle. The warheads can thus achieve wide separation, both in flight and on impact. A single 200 KT weapon with a 0.25 n.m. CEP would have a 40 per cent chance of destroying a 300 psi silo. Three such warheads would have almost an 80 per cent chance, but this is still lower than the chance given by an equally accurate single warhead of 2 MT.

Soviet Systems

(i) *SS-9 Scarp*. The Soviet Union has been producing and deploying the missile known to the West as the SS-9 *Scarp* since 1965. The SS-9 is an extremely powerful, three-stage, liquid-propellent missile with a maximum range of about 8,500 n.m. (9,800 statute miles), an inertial guidance system and an estimated accuracy of about 0.5–0.8 n.m. CEP. According to United States estimates, each SS-9 launcher costs about $25–$30 million. As originally deployed, the SS-9 was apparently designed to deliver only a single warhead of between 10 and 25 MT. In August 1968, however, the Soviet Union began flight tests of a multiple re-entry system for the SS-9 which is reportedly capable of delivering three separate warheads with individual yields estimated to be as high as 5 MT.[16] The exact nature of the multiple re-entry system for the SS-9 is a matter of dispute. Official American spokesmen have said that it involves sequential separation of individual warheads, and that the time intervals involved can apparently be varied. This would provide a degree of longitudinal separation between the impact points of the warheads but, without some other mechanism, would not achieve lateral separation. There is presumably, therefore, some additional mechanism to release the warheads at varying lateral angles from the original flight path. The degree of separation which can be achieved by this means with the SS-9 has not been revealed, but official American spokesmen have said that it is considerably less than the separation obtainable with American multiple re-entry systems for *Poseidon* or *Minuteman 3*. It might therefore be in the region of ten miles. American experts have been persuaded by their observation of SS-9 tests that the system is designed to attack separate *Minuteman* silos, the average distance between which is about ten miles. Whether or not this is the case, a separation of approximately ten miles would also be needed in order to maximize the damage which individual warheads of 5 MT could cause to a single "soft" target. American fears are additionally based, however, on the prediction that the SS-9 multiple re-entry system might attain an accuracy as high as 0.25 n.m. CEP. A 5 MT weapon with a 0.25 n.m. CEP would have almost a 99 per cent chance of destroying a 300 psi silo. If the accuracy were 0.5 n.m. CEP, the probability would be reduced to 67 per cent. The capability of the SS-9 MRES system against multiple "hard" targets may be restricted, however, by limitations on the available separation between warheads. It has been estimated that a more advanced multiple re-entry system, capable of greater separation, could be fitted to the SS-9 by 1973. It is also estimated that the Soviet Union, which has already deployed about 250 SS-9s, could raise that number to 500 by 1975. There is, of course, no way of knowing whether the SS-9 deployment programme will continue at such a pace or how many of the SS-9s added to the Soviet force will be equipped with multiple re-entry systems. It is most unlikely that any such multiple re-entry system for the SS-9 has yet been deployed, although one American official has estimated that deployment of the system already under test might begin during the second half of 1970.

(ii) Fractional Orbital Bombardment System (FOBS). The Soviet Union has carried out several tests of a FOBS missile which uses the same launcher vehicle as the SS-9. The range of such a missile is notionally indefinite, but it is assumed that the warhead would, in practice, be directed to its target before the completion of the first orbit. Because of the very high power/weight ratio required for FOBS flight, the warhead carried by this missile could not be nearly as large as that delivered by the SS-9 in ballistic flight. Nor could a FOBS re-entry system without any independent manoeuvring ability achieve an accuracy better than about 1 n.m. CEP. The FOBS has the advantage, however, of flying at a much lower altitude (about 100 miles) and thus of giving much less warning to defensive radars of its approach. For that reason, the American Government considers it to present a particular threat to SAC bomber bases. It is worth noting that the power necessary for FOBS flight could also be used, more economically, to fire the missile on a depressed ballistic trajectory. This would achieve at least a part of the advantage of surprise, without imposing such a heavy penalty upon the payload which could be carried.

STRATEGIC BOMBERS. For reason of both brevity and consistency, this study has not considered the air-to-surface missiles (ASMs) carried by strategic bomber aircraft. It should be noted, however, that there is a close parallel between these and other forms of multiple re-entry system. An aircraft armed with several nuclear weapons is equivalent, in some senses, to an ICBM or SLBM armed with several warheads. A bomber system capable of delivering only free-fall bombs can certainly achieve, in theory, the separation needed to attack individual targets, but it cannot present more than one target to a defensive system because the bomber must reach the target area or areas before releasing its bomb. Multiple targets may, however, be presented to a defence by a bomber armed with long-range, stand-off ASMs which can be launched outside the coverage of defensive aircraft and missiles. Bomber aircraft and their missiles may also be able to exploit the limitations of defensive radar coverage by approaching from unprotected directions, or by flying at very low altitudes. The advantage they may gain by doing so is offset, of course, by the comparatively slow speed of both bombers and ASMs.

In addition to three or four free-fall bombs, United States B-52 bombers can each carry one or two ASMs, known as the AGM-28B Hound Dog, which have an estimated range of 700 miles and are capable of delivering warheads in the megaton range. These are now to be augmented by smaller, faster and more accurate shortrange attack missiles (SRAMs), which will be used to equip both B-52s and the newer FB-111s which are about to come into service. At a slightly later stage, these aircraft will also be provided with Subsonic Cruise Armed Decoys (SCADs), which have the dual role of acting both as nuclear ASMs and as decoys capable of simulating the radar cross-section of a bomber in order to confuse the defense. SRAMs and SCADs might also provide the initial armament of the Advanced Manned Strategic Aircraft (AMSA), now designed the B-1A, which is being designed but which could not enter service before 1977.

The Soviet Long-Range Air Force has about 150 intercontinental aircraft, some of which carry a nuclear ASM with a stand-off capability, known in the West as Kangaroo.

FUTURE PROSPECT. Partly as a result of studies carried out under the heading of Strat-X, the United States has been designing a new ICBM known as the WS-120A or improved capability missile (ICM). This missile would be a static silo-launched weapon with a longer range, a higher accuracy and a much larger payload than Minuteman 3.

Even more exotic ICBM concepts are reported to be under study in the United States. These include dual purpose missiles, suitable for use as either ICBMs or ABM interceptors (Project Janus), "dormant" ICBMs to be deployed in waste areas or on the sea bed and fired by remote command (Project Nemesis). ICBMs to be launched from extremely deep silos, up to 3,000 feet below the surface (Project Vulcan), and mobile ICBMs which could be dispersed from their protected sites on warning of an attack (Project Ranger).

No improvement of kind, rather than degree, seems likely to affect the design of nuclear explosives themselves during the foreseeable future. In two directions, however, the design of the re-entry systems which deliver the warheads seems to be susceptible of fairly rapid improvement. As we have seen,

Footnotes at end of article.

multiple warheads are intrinsically no more accurate than single warheads; the accuracy of both depends upon the design of their guidance systems. They are also just as vulnerable as single warheads to interception by ABM missiles; their advantage on this score lies in their numbers. Research efforts are now directed, therefore, to the design of re-entry vehicles which will have extremely high accuracies, and which will provide a defensive system with the minimum opportunity to intercept them.

In order to achieve both higher accuracy and a better chance of avoiding interception, individual re-entry vehicles must be given the ability to manoeuvre within the atmosphere. The most obvious way of doing this is to provide them with their own guidance systems and with independent means of propulsion. Thereafter, by modifying the direction and strength of their propulsive effort, they will be able to adopt a flight path, possibly by approaching at very low altitude, which will reduce to a minimum the warning time given to the defence. In addition, they may be enabled to detect the approach of defensive interceptors and to take appropriate evasive action. Finally, they will be able to correct for any deviation from their exact aiming points.

Even without independent means of propulsion, it will be possible in the future to provide individual re-entry bodies with some ability to manoeuvre. By giving them an aerodynamic shape to obtain lift from the atmosphere during re-entry and control surfaces with which they can be steered, they could be made to manoeuvre, without power, over a fairly large area. Tests of such "lifting bodies" have already been carried out in the United States.

Even if re-entry bodies can be made manoeuvrable, their accuracy will depend upon more precise guidance than an inertial system alone can provide. A number of methods for very accurate terminal guidance have been proposed and studied. One of the most interesting is a system which would equip each armed re-entry vehicle with a "memory" in which would be stored an extremely detailed map of its target, taken from reconnaissance photographs. The re-entry vehicle, on approaching the target area, would scan the ground visually until it had matched the ground image with the map retained in its memory. Provided that its manoeuvrability was good enough, it would then be able to strike its target with theoretically absolute accuracy. It is on systems such as this that recent predictions about placing a satchel charge on a silo door have been based.

Attention is being paid by the United States to all these techniques in designing more sophisticated multiple re-entry systems for future generations of offensive missiles. One proposal is for an Advanced Re-entry Vehicle (ARV) which would have an integral propulsion system enabling it to correct its course after re-entry and to choose a flight path calculated to evade an ABM defence. Another proposal is for a Self-Aligning Boost Re-Entry (SABRE) system which, in addition to these advantages, would have sensors to scan the ground and identify the target, towards which the re-entry vehicle could then steer. Other proposals include a Boost Glide Re-entry Vehicle (BGRV) and a Manoeuvring Ballistic Re-entry Vehicle (MBRV), both of which would apparently take advantage of atmospheric lift to manoeuvre during their terminal phase.

Any of these advanced re-entry systems could be used for submarine-launched missiles as well as for land based ICBMs. One or other would presumably be fitted to the Underwater Long-range Missile System (ULMS) which is being considered as the successor to Poseidon and which would apparently be the first submarine launched missile to have a genuinely intercontinental range.

One further American programme which deserves to be mentioned has developed (but not yet deployed) a means of allowing a missile to signal the successful release of its re-entry vehicle to the launch control. This is much more than a pedantic refinement, since it would in theory, permit an attacker to fire additional missiles to replace vehicles which had failed in flight.

Hardly anything is known about Soviet research in this field. There is no reason, however, why the use of multiple re-entry systems should be confined to the SS–9. Either the liquid-fuelled SS–11, which is already in service, or the solid fueled SS–13, which is just being introduced, would be capable of carrying such a system, as would the longer range SLBM now being installed in the new Soviet Y-class submarines.

FOOTNOTES

[1] The *ionosphere* is a composite layer of the upper atmosphere, *extending upwards from an altitude of about 40 miles above the earth*. It has the ability to reflect radio and radar waves of particular frequencies.

[2] See p. 1 below.

[3] The best general guide is still *The Effects of Nuclear Weapons* (Washington: US Atomic Energy Commission, revised ed. 1962).

[4] *Exo-atmospheric systems may also be able to profit from the very strong electro-magnetic pulse (EMP)* effect produced when *a nuclear explosion* in space *distorts a part of the earth's magnetic field*. This can *disrupt electro-magnetic circuits*, including communications circuits, at considerable range and for a long time. Its effects, however, are indiscriminate; defensive communications, as well as offensive electronics, may suffer.

[5] See p. 7 above.

[6] There are, in fact, *two areas of ionization*. One, the *fireball of the explosion itself*, is intense but relatively small. The other, the so-called *beta patch created by the expulsion of free electrons from the molecules of the upper atmosphere, may extend over thousands of square miles and may last for some minutes*.

[7] This might be possible if a FOBS missile (see pp. 13 ff.) were to be fired on a south polar, rather than north polar, trajectory.

[8] These warning times are, of course, increased by placing the radar *ahead* of the target.

[9] To be specific, each re-entry vehicle in a system with a CEP of 0.25 n.m. would have a slightly better than 75 per cent probability of landing within 2,200 feet of its target.

[10] The radars concerned were the Zeus Acquisition Radar (ZAR) for long-range detection, the Discrimination Radar (DR) to analyse incoming objects, the Target Track Radar (TTR) to track offensive vehicles within Zeus range and the Missile Track Radar (MTR) to guide the Zeus to its target.

[11] The inclusion of sites in Alaska and Hawaii would bring the total cost to about $10,800 m.

[12] SA–2 (Guideline) is the Western name for what has been the standard Warsaw Pact SAM system for some years. It is also the system which has seen service in Vietnam. Nike-Hercules and Hawk are current American SAM systems, the former having a longer range and the latter having greater mobility and a better low altitude capability.

[13] A polar orbit is one which carries a satellite around the earth in a series of loops from north to south and back again. A synchronous orbit is one which places a satellite at an altitude of about 22,240 miles above the Equator, at which height the satellite travels eastwards at the same speed as the earth's rotation and thus remains constantly over the same spot on the earth's surface.

[14] The ranges given in this and subsequent paragraphs are theoretical maxima. They may be reduced, sometimes significantly, by the weight of the particular payload involved (cf. p. 23 footnote).

[15] With a full 2,000 lb payload, Minuteman 3 would have a range of 5,300 n.m. (6,100 statute miles).

[16] This estimate would imply a more favourable ratio between the yield of multiple warheads and the yield of a single warhead carried by the same missile than is the case with either the Poseidon or Minuteman 3 system. It may therefore be somewhat high.

SECOND ANNUAL REPORT ON ENVIRONMENTAL QUALITY

HON. JOHN D. DINGELL

OF MICHIGAN

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. DINGELL. Mr. Speaker, in the interest of assuring that the information therein contained will be available to my colleagues, I insert the text of the August 1971 issue of the Council on Environmental Quality's "102 Monitor" at this point in the CONGRESSIONAL RECORD:

[From the 102 Monitor, Council on Environmental Quality, August 1971]

CEQ PUBLISHES SECOND ANNUAL REPORT ON ENVIRONMENTAL QUALITY

On August 6, President Nixon transmitted to Congress the Second Annual Report of the Council on Environmental Quality. The following is a summary of the Report.

CHAPTER 1: THE PAST YEAR—FEDERAL AND INTERNATIONAL ACTIVITY

Chapter 1 discusses the wide range of activities of the Federal Government, other nations, and international organizations undertaken in the last year to improve the quality of the environment.

Executive branch actions.—Several major administrative actions were taken during the last year. The $2.45 billion 1972 Budget request for EPA is almost a 90 percent increase over the 1971 level. Under the recently initiated Refuse Act program, a permit must be obtained for all industrial discharges into navigable waters of the United States. Permits will be conditioned on the adequacy of steps taken or to be taken to meet water quality standards. Enforcement activity through both criminal and civil suits has accelerated dramatically in the past year.

The Federal Government spent $113 million in FY 1971, and the FY 1972 Budget requests $250 million to control air and water pollution from Federal facilities. The average annual appropriation for the previous 3 years was only $52 million. EPA has initiated proceedings to cancel registration for DDT, aldrin, dieldrin, and Mirex. GSA is now requiring recycled paper in its procurement specifications, and CEQ is working with EPA and other Federal agencies on a study of recycling, looking toward incentives to encourage more re-use and recycling of wastes.

AEC has proposed new regulations to reduce human exposure to radioactivity from reactor effluents to less than 5 percent of background levels and to 1 percent or less of exposures permitted under present environmental standards. A joint HEW–EPA National Toxicology Center for testing potentially toxic substances has been established at Pine Bluff Arsenal in Arkansas.

Executive branch legislation.—The report describes many of the President's 1971 environmental proposals, including: a tax on lead in gasoline and a sulfur oxides emissions charge; a $12 billion nationwide program for the construction of waste treatment plants and strengthened water pollution standard setting and enforcement authority;

regulation of toxic substances, noise, and ocean dumping; a National Land Use Policy Act; a greatly expanded open space and recreation program, bringing parks to the people in urban areas; and controls over siting of power plants and reclamation of strip and underground mines. Most have been sent to the Congress, and many have been the subject of hearings.

Organization.—In the past year, significant Federal reorganization has occurred or been proposed. Federal pollution control programs were consolidated in EPA, and oceanic and atmospheric research and monitoring programs were consolidated in NOAA in the Commerce Department. The President's proposed Department of Natural Resources would bring together natural resources programs, including energy, water, and recreation resources, and land management activities. NOAA would become part of the new Department.

International activities.—At least 12 nations have created new environmental organizations. Japan, for example, created the first new cabinet position in 100 years for environmental quality activities. The United States is working with Canada on a comprehensive agreement to curb Great Lakes pollution, with Japan to establish joint programs on air and water pollution control problems, and with a number of specialized international bodies on joint environmental action. The member nations of NATO, through its Committee on the Challenges of a Modern Society, have agreed to a goal of reducing intentional oil discharges from vessels by 1975, if possible, and no later than 1980. This goal was confirmed by the Intergovernmental Maritime Consultative Organization, the chief international agency developing controls over oil pollution. The Organization for Economic Cooperation and Development is looking at the impacts of environmental quality standards of international trade. The Economic Commission for Europe provides a forum for the East and West to meet on environmental problems. Preparations are being made for the 1972 U.N. Conference on the Human Environment, which will bring together both developing and developed nations.

CHAPTER 2: THE PAST YEAR—STATE AND LOCAL ACTIVITY

Chapter 2 covers activities of State and local governments, including enforcement activities, organizational reforms, funding and manpower, program innovations, and increased State regulation of land use.

Controlling pollution.—Many States are strengthening their programs to control pollution. As a result of California State, local and voluntary actions, ocean dumping along the Pacific Coast has been reduced from one million tons to 24,000 tons between 1968 and 1971, excluding dredge spoils. Colorado has initiated a comprehensive regulatory program to control subsurface disposal of liquid wastes. Six States and many localities have enacted measures to control phosphates in detergents in order to slow eutrophication. The Illinois Public Utility Commission has imposed both air and water pollution controls on a major electric utility as part of a rate regulation action.

Action by New York resulted in mercury reductions of 97 percent in State waters—down to 2 pounds a day. Under its Pure Water Program, 358 municipal sewage treatment plants, costing approximately $2.2 billion, were built, were being designed, or were under construction as of March 31, 1971. State funds of $1 billion have been committed to these projects. A new Michigan law requires industries discharging effluents to pay a fee for effluent and water quality monitoring. Oregon became the first State to require deposits on beverage containers in order to reduce litter.

Organization.—Illinois, New York, and Washington are among the States that have consolidated environmental activities. New York created a Department of Environmental Conservation, covering pollution and natural resource programs. Washington's Department of Ecology includes only pollution control programs, but has pioneered a functional rather than media or pollutant oriented internal structure. In Illinois three institutions are responsible for environmental pollution: a full-time Pollution Control Board to set standards and adjudicate enforcement actions, a State EPA for enforcement and other program activities, and an Institute for Environmental Quality to conduct long-range policy planning and research.

Program innovations.—Maryland followed New York and Ohio in setting up a public corporation to finance waste management facilities statewide. Such corporations can help to achieve economies of scale by stimulating regional waste management systems. Vermont has enacted an effluent charge, the first State to do so. Muskegon County, Michigan, with assistance from EPA, is demonstrating a new waste disposal and land treatment system that will keep sewage out of Lake Michigan by using it productively.

Land use.—Several States now control critical areas and types of land use. New State land use regulation extends to protection of wetlands, controls over new electric power plant siting, and broad authority to restrict potentially harmful development. Vermont enacted a comprehensive law requiring statewide land use planning and permits for new development, and Maine passed a new industrial site location law. Delaware has chosen to protect its coastline for recreation by prohibiting certain heavy industries from locating there. New York acted to protect agricultural lands.

CHAPTER 3: THE PAST YEAR—PRIVATE ACTIVITY

Chapter 3 describes industry's progress in meeting environmental quality standards and the challenges it still must meet, as well as citizen actions to preserve the environment.

Industry spending for pollution control.—Available data show that industry expenditures for control technology increased by 50 percent between 1969 and 1970 and will increase by a projected 46 percent in 1971. If expenditures increase as projected, it appears that industry will meet EPA's $4 billion estimate of needed capital investment for waste water treatment over a 4-year period. Anticipated expenditures also should equal the $8 billion investment that CEQ estimates will be needed for air pollution control over the next 6 years. When compared to industry's own larger estimates of needed investment, expenditures at projected 1971 levels would delay meeting standards beyond presently projected timetables in several major industries. Thus, if these estimates are correct, some industries will need to substantially increase planned expenditures.

Citizen organizations and activity.—There are an estimated 3,100 environmental organizations in the United States: approximately 2,500 local, 250 national and regional, and 400 State. Combined membership in the five largest national environmental organizations rose by almost one-third, from 1.2 to 1.6 million during the year ending June 1, 1971. The Nature Conservancy doubled its acquisitions in 1970 over the previous year—to 86,000 acres. By court action, environmental groups have often halted or forced reconsideration of activities that may harm the environment. Voters approved all five bond issues in 1970 identified by underwriters for "pollution control", valued at more than $1 billion. In addition, 90 percent of bonds designated for sewage treatment plant construction were approved, compared to a 60 percent approval rate for all bonds. A new environmental coalition of seven major conservation groups is advocating pollution charges and is pushing for enactment of a sulfur oxides emissions charge.

CHAPTER 4: THE ECONOMY AND THE ENVIRONMENT

Chapter 4 discusses the relationships between economics and environmental quality: the damages to society, the costs of control facilities, their impact on the economy, economic incentives for abatement, and assistance strategies to ease transitional adjustment.

Damages from pollution.—The costs of air pollution are realized in increased health services, lost productivity, lowered property values, and direct damage to crops and materials. The estimated annual $16 billion in air pollution costs to health, vegetation, materials, and property values amounts to over $80 for each person in the United States. These figures are based on a wide variety of assumptions and can only be considered illustrative of the actual damages from air pollution.

Nationwide costs of water pollution are less well documented, but damages in the billions of dollars are indicated. The losses of ocean and coastal fisheries and shellfish production by pollution have been substantial. Over one-fifth of the Nation's shellfish beds have been closed. The loss of recreational opportunities, destruction of valuable ecological systems, and the loss of scenic amenities represent other costs from water pollution. The costs of noise, congestion, or the aesthetic and other damage to the environment from mining or transmission lines have not been calculated. Many potential types of damage—e.g., from minute changes in world climate—remain unknown.

Cost of pollution control.—Available pollution control cost data cover only air pollution control, water pollution control, and solid waste management expenditures. The data are limited in that they do not cover all sources and all pollutants, they are not all based on recent studies, and the basic assumptions in the cost studies vary widely. In all probability, they underestimate the actual expenditures to be incurred—probably substantially. Cumulative expenditures for air, water, and solid waste control are estimated at $150.2 billion for 1970 to 1975: $38 billion for water, $23.7 billion for air, and $43.5 billion for solid waste. About $62 billion is estimated to meet air and water quality standards, while the $43.5 billion is for collection and disposal of solid waste. Growth in annual control cost is: air, from $0.5 billion in 1970 to $4.7 billion in 1975; water from $3.1 billion in 1970 to $5.8 billion in 1975; and solid waste, from $5.7 billion in 1970 to $7.8 billion in 1975.

Costs and benefits.—Decisions on the level of environmental quality to be achieved need to take into account both benefits to be attained and costs to be incurred. The annual damages from air pollution in 1968 have been estimated at over $16 billion. Reducing the bulk of the damages is estimated to result in an annualized cost of $4.7 billion by 1975. When comparing 1968 benefits with 1975 annualized control costs, the identified benefits are over three times the costs. As the report discusses, the data on both costs and damages are too imprecise to draw any firm conclusions as to benefits versus costs, although they appear to be very favorable.

The costs of curbing the amount of wastes discharged vary at different levels of control. Usually the higher the level of abatement, the higher the per unit cost of control. Because dischargers have different control costs, achieving any given level of ambient quality can result in very different total abatement costs depending on the levels of control that different emitters are required to attain. Examples of such cost savings possibilities are discussed.

Impacts of costs on the economy.—Protecting the environment requires adjustments in the economy. Some firms and activities will find it difficult to adjust, and a few will find it impossible. However, these effects are

transitional and will affect only a few sectors. In the aggregate, the economy should not suffer employment losses or significant changes in economic growth, because pollution costs for one industry or firm are jobs and production for others. Further, environmental control costs, although large in the abstract, are only a small percentage of total GNP. In general, U.S. exports and imports are not goods with high pollution control costs. Also, whatever immediate competitive advantages foreign products enjoy will shift as other nations upgrade environmental quality and as the U.S. exports technology and expertise in pollution control. The chief transitional problems will occur from closing marginal plants at a faster rate than would be the case without pollution controls, which may create some localized employment problems.

Strategies for attaining environmental goals.—Enforcement has been the keystone of environmental quality control efforts in the U.S. However, enforcement remains an uncertain and continuing problem, because delays are relatively easy to obtain and public bodies must prove violations and feasibility of control techniques. With pollution charges, it would be cheaper to stop pollution than to continue to pollute. Charges would provide a strong incentive to industry to install control equipment, change processes and manage wastes better. The CEQ believes that an optimum strategy for dealing with environmental problems is to employ both regulatory authority and pollution charges. The Administration's proposed lead tax and sulfur oxides emissions charge are examples of how this would work.

The effects and limitations of subsidies to aid transitional problems, such as tax write-offs, guaranted loans, and grants, are discussed, as well as assistance targeted to specific problems arising from pollution control requirements.

CHAPTER 5: THE LAW AND THE ENVIRONMENT

Chapter 5 analyzes recent legal developments, including court decisions giving force to the National Environmental Policy Act (NEPA) and similar Federal laws, action to give more consideration to environmental factors in Federal administrative decisions, stronger Federal pollution laws, and innovative environmental developments in State law.

Impact of NEPA.—Under Section 102(2)(C), NEPA requires an environmental impact statement from all Federal agencies proposing a major action with significant environmental impacts. Over 20 Federal district court and several appeals court decisions involving citizen challenges to Federal action under the Act have been reported. The administrative and court interpretations given to NEPA and other environmental protection laws are discussed.

Burden of proof.—More and more, those discharging certain materials into the environment are required to show that their actions will *not* be harmful, rather than the Government having to prove the danger after the fact. When EPA finds that an air pollutant is a health hazard, industry must either comply with the emission standards or prove that the hazard does not exist. This new approach to burden of proof is explicit in the Administration's proposed bills to regulate ocean dumping and to control toxic substances.

Citizen enforcement.—The Clean Air Act created a major precedent in giving citizens the right to sue to enforce air pollution standards against Government and private entities. A similar provision has been recommended by the President in proposed amendments to the Federal Water Pollution Control Act.

The citizen as "environmental ombudsman."—The right of citizens to participate in and seek review of administrative decisions affecting the environment has been greatly expanded by NEPA and a number of court decisions. The Freedom of Information Act, the Administrative Procedures Act, NEPA, executive branch actions, and provisions giving citizens the power to enforce Federal pollution control standards have made the citizen a powerful "environmental ombudsman."

State action.—A number of States have added environmental protection provisions to their constitutions; others are considering doing so. Since enactment of NEPA, several State legislatures have passed "action forcing" provisions similar to NEPA's environmental impact statement requirements. Other State legislatures have bolstered the citizen's right to challenge activities detrimental to the environment in court. Similarly, State public nuisance laws have been used to enforce control of pollution.

CHAPTER 6: THE INNER CITY ENVIRONMENT

Chapter 6 discusses the environmental problems of the inner city—the decaying, older urban neighborhoods in which the poor generally live.

Air pollution.—Surveys in several large cities indicate the heavy air pollution of the inner city. Concentrations of particulates, carbon monoxide, and sulfur oxides have been observed to be highest in the areas of highest population density, which often correlate with poverty neighborhoods.

Lead.—A test of 87,000 New York City children showed that 2,649 suffered lead poisoning. Tests in other cities have revealed high blood lead levels in a significant proportion of children from poverty neighborhoods. These lead levels were attributed to eating flaking paint containing lead.

Water.—Older water pipes containing lead have contributed to a lead content of as high as 920 micrograms per liter of water in some inner city areas; the nationwide average is 20 micrograms.

Sanitation.—Inner city neighborhoods accumulate more litter and garbage than other parts of urban areas, even though garbage is often collected more frequently. Lack of refuse containers and overcrowding are partly responsible in some cities for this problem. As a consequence, rats often thrive in the inner city. An estimated 60 to 90 percent of rat bites occurs in inner city neighborhoods.

Neighborhood deterioration.—Dilapidated and abandoned buildings are concentrated in many inner city neighborhoods. It is estimated that there are more than 100,000 abandoned dwelling units in New York City, between 20,000 and 30,000 in Philadelphia, and more than 10,000 in St. Louis. In a St. Louis Model Cities area, 16 percent of residential structures were abandoned. Overcrowding in adjacent dwellings is often found in neighborhoods containing many abandoned units.

Open space and recreation.—Of 491 million acres of public recreation area in the U.S., about one-tenth lies within urban areas. Studies now underway for HUD and Interior show that in recent years more than 22,000 acres of urban parkland have been lost. The President's legacy of parks program is planned to greatly increase urban parks and recreational opportunities, particularly in the inner city.

Transportation.—Inner city and conservation groups have united in some cities to seek greater balance in the transportation system. In Boston, a coalition effected a deferral in construction of several highway segments until overall transportation needs were reviewed. Transportation planners are showing more sensitivity to the problems highways raise, especially in avoiding the displacement which disproportionately affects low and middle income neighborhoods. New rapid transit rail systems are being considered, are planned, or are under construction in 16 American cities.

Need for flexibility.—Because most funds available to deal with urban problems are raised locally, local governments will have to take the lead in tailoring solutions to specific inner city conditions. Services are often inadequate due to inadequacy of the property tax base on which localities depend. As the environment deteriorates, middle class residents move out and income from the property tax declines. Federal general and special revenue sharing and welfare reform will add to the funds available to the inner city and will remove Federal constraints on use of funds.

CHAPTER 7: STATUS AND TRENDS

Chapter 7 presents data on the status and trends of traditional pollution problems of air and water, solid wastes, radiation, and pesticides. It also covers toxic substances, wildlife, population, and land use.

Monitoring.—Evaluating the condition of the environment is especially difficult because meaningful data are few, technology is lacking to measure accurately many pollutants, and there is not yet any general agreement on requirements for environmental quality indices. Nevertheless, there are fairly extensive Federal monitoring programs; OMB estimates direct Federal expenditures on such programs at $40 million in FY 1971, excluding State, local, and industrial activities.

Air pollution.—Overall, measured ambient levels of sulfur dioxides and carbon monoxide have decreased in large urban areas, particulates have remained relatively constant, while estimated nationwide emissions of air pollutants rose slightly in 1969. Control programs and dispersion of industry apparently account for this difference. Emissions from automobiles decreased as a result of pollution control devices on newer cars. Because data on total emissions are based on extrapolations from various sources and not on actual measurements, and because urban concentrations vary from site to site within the same city, the validity of the data is uncertain.

Water pollution.—The most commonly used measure of the effect of wastes on water quality is 5-day biochemical oxygen demand (BOD). Although total BOD produced doubled during the period from 1957 to 1968, due primarily to greatly increased manufacturing activities, this was about matched by increased municipal and industrial waste treatment. The result is that the BOD of wastes discharged into receiving waters in 1968 was only slightly larger than in 1957. Yet the overall quality of the Nation's waters has probably deteriorated in recent years because of accelerated eutrophication, increased discharges of toxic materials, greater loads of sediment, and other factors. EPA estimates that almost one-third of U.S. stream miles are characteristically polluted. Less than 10 percent of U.S. watersheds was characterized by EPA regional offices as unpolluted or even moderately polluted. These data are only partly based on actual monitoring but rather represent the best judgment of EPA personnel.

Radiation.—Environmental radiation levels have declined markedly since the early 1960's because of the moratorium on nuclear weapons tests in the atmosphere. However, radiation exposure from X-rays and other uses has probably increased.

Pesticides.—Use of persistent pesticides has been declining and should eventually alleviate some of the adverse environmental effects from their use. Yet they are being replaced by more toxic materials which will probably result in a higher incidence of accidental poisonings. The level of particular pesticides found in a typical diet, with one exception (aldrin-dieldrin), has been well below allowable standards established by the World Health Organization. Fish, birds, and other wildlife populations, on the other hand, have been affected by pesticides in the environment, especially rising concentrations of persistent pesticides that impede repro-

duction. Levels lethal to wildlife have been documented; eagles, for example, have been killed by dieldrin and thallium.

Toxic substances.—Evidence indicates that mercury-laden sediments may cause a more acute mercury problem. The mercury is absorbed by micro-organisms, which, in turn, move up the food chain to higher forms of life. As this process continues, mercury becomes more concentrated in fish tissues. Levels of lead in the air have increased significantly over the past 7 years at several locations in 3 cities—Cincinnati, Los Angeles, and Philadelphia; all the sites monitored showed increases ranging from 2 to 64 percent. Ambient levels at San Diego are rising at a rate of 5 percent per year.

Solid waste.—Market and other incentives have tended to work against recycling materials. Consumption of packaging materials has increased from 404 pounds in 1948 to 578 pounds per capita in 1970 and is expected to reach over 660 pounds by 1976. Use of waste material for making paper, aluminum, copper zinc, and lead is declining, as is the percentage of tires made from old tires.

Wildlife.—Public use of wildlife for nonhunting, noneating purposes has increased by 25 percent on Federal lands administered by the Bureau of Land Management. Interior's Endangered Native Species list now includes a total of 101 different species, a significant increase since the last list. Populations of many species of non-game wildlife seem to be declining, with species high on the food chain such as predators most affected. A new threat to wildlife habitats comes from such vehicles as snowmobiles, dune buggies, and motorcycles.

Population.—The Interim Report of the Commission on Population Growth and the American Future reports some of the difficulties that would be incurred in maintaining a constant population. Because of the large number of persons in the child bearing age, the Commission reports that to stabilize population growth now, each couple could have an average of only one child. Thereafter, this small generation would have to have two children to maintain a constant population, and their grandchildren three. Then the process would have to reverse. Although stabilization of population at current levels does not seem possible, population growth is recognized as a problem that must be explicitly considered in government planning and policy.

Land Use.—Wetlands and open space are under particular pressure from development. In the Atlantic Coast States, new housing construction is the single greatest cause of coastal wetland losses. From 1954 to 1964, New York and Connecticut lost more than 29 percent and 12 percent, respectively, of their coastal wetlands. The trends of wetland loss in coastal States continues. Federal acquisition of land for national forests and parks has grown steadily in recent years. The parkland-people ratio remains approximately constant but is rising slightly in a number of cities, partly because of diminishing populations in some central cities.

CHAPTER 8: ENVIRONMENTAL QUALITY 1971: A PERSPECTIVE

The last chapter reviews many points raised in the report and discusses technology assessment as a tool to prevent unwanted and unanticipated environmental problems.

Highlights.—Environmental quality as an issue is maturing. The "rules of the game" are shifting to make environmental quality part of decision-making processes and institutions. Organizations concerned with the environment are being strengthened at the Federal, State, and international levels. Changes in the law provide a new base for citizen actions, but such actions must be joined with effective government efforts if success is to be achieved. Pollution control costs are being factored into economic decisions and are being reflected in the prices of products. The need for economic incentives to supplement regulatory authority is a major conclusion of the Council's report.

Technology assessment.—Although technology assessment is a relatively recent term, it has been practiced for many years. It has been applied in our food, drug, and pesticide control laws. However, there is increased recognition of the need for two important elements of technology assessment. It must take place before a technology is widely dispersed, and it must include consideration of secondary and tertiary effects of the technology. For example, the automobile not only brought about air pollution and congestion but it also changed land use patterns and the very nature of urban life. The environmental impact process of NEPA, as well as such proposals as the Toxic Substances Control Act, provide a mechanism for technology assessment. The chapter emphasizes the need to tie technology assessment to specific policy machinery so that the information developed can guide decisions on the use of new technology.

SOURCE FOR ENVIRONMENTAL IMPACT STATEMENTS

In order to receive more efficient and prompt service, requesters are urged to order draft and final impact statements from NTIS rather than the preparing agency. Each statement will be assigned an order number that will appear in the *102 Monitor* (at the end of the summary of each statement) and also in the NTIS semi-monthly Announcement Series No. 68, "Environmental Pollution and Control." (An annual subscription costs $5.00 and can be ordered from the NTIS, U.S. Department of Commerce, Springfield, Virginia 22151.)

Final statements will be available in microfiche as well as paper copy. A paper copy of any statement can be obtained by writing NTIS at the above address and enclosing $3.00 and the order number. A microfiche costs $0.95. (Paper copies of documents that are over 300 pages are $6.00.)

NTIS is also offering a special "package" in which the subscriber receives all statements in microfiche for $0.35 per statement.

Statements will still be available for public scrutiny in the document rooms of the various agencies. However, only limited copies will be available for distribution.

Yet another possible source of statements is from the Environmental Law Institute, 1346 Connecticut Ave., N.W., Washington, D.C. 20036. Envelopes bearing orders should be marked "Document Service." The Institute charges $0.10 per page. The number of pages is indicated at the end of each summary in the *Monitor,* as well as an order number. Please enclose the correct amount of money with your order. It is not necessary to be a subscriber to the *Environmental Law Reporter,* available from the Institute for $50.00 per year, to take advantage of this service.

ON THE FOLLOWING PAGES ARE ENVIRONMENTAL IMPACT STATEMENTS RECEIVED BY THE COUNCIL FROM JULY 1 THROUGH JULY 31, 1971

(NOTE: At the head of the listing of statements received from each agency is the name of an individual who can answer questions regarding those statements.)

ATOMIC ENERGY COMMISSION

Contact: For Non-Regulatory Matters: Joseph J. DiNunno, Director, Office of Environmental Affairs, Washington, D.C. 20545 (202) 973-5391.

For Regulatory Matters: Christopher L. Henderson, Assistant Director of Regulation for Administration, Washington, D.C. 20545 (202) 973-7531.

Draft

Title, description, and date of transmittal

Reactor Testing During FY 1972: Nuclear Rocket Development Station, *Nevada.* (Statement issued jointly by AEC and NASA.) Activities of this on-going testing program are limited in FY 72 to a new type of reactor, the Nuclear Furnace. Purpose: to test advanced nuclear rocket fuel elements. (NTIS Order No. PB 200-774-D) (ELR Order No. 28, 37 pages) 7/2.

Fast Flux Test Facility (FFTF): Benton County, *Washington.* Involves construction of this nuclear reactor complex at AEC's Hanford Reservation. Purpose: irradiation testing of fuels and materials to be used in future Liquid Metal Fast Breeder Reactor (LMFBR). (NTIS Order No. PB-200-970-D) (ELR Order No. 117, 65 pages) 7/12.

Liquid Metal Fast Breeder Reactor (LMFBR) Demonstration Plant. Development of a 300 to 500 megawatts electrical sodium cooled, fast neutron reactor, fueled with a mixture of plutonium oxide and uranium oxide. Research and development, construction and testing will be achieved by a cooperative arrangement with selected organizations. Purpose: to demonstrate the feasibility of commercial application of the LMFBR to electrical power generation. (NTIS Order # PB-200 778-D) (ELR Order # 134, 89 pages) O 7/12.

Application for a construction permit by the Cincinnati Gas & Electric Company Columbus Southern Ohio Electric Company, & the Dayton Power & Light Company to build the Wm. H. Zimmer Power Station Unit 1 (Docket No. 50-358). To be located 24 miles SE of Cincinnati, on the *Ohio* side of Ohio River, on a 509 acre site. Consists of boiling water reactor of 2436 megawatts thermal, a turbine generator with gross electrical output of 840 megawatts electrical, etc. About 12,000 gallons of water per minute will be required. (ELR Order # 192, 62 pages—draft, 441 pages—applicant's Report-441) (NTIS Order # PB-201 203-D) 7/19.

Final

Title, description and date

Enrico Fermi Atomic Power Plant, Unit No. 2: Frenchtown, *Michigan* (Docket No. 50-341). Detroit Edison Company has applied for a construction permit and operating license for Unit 2. This plant will utilize a boiling water reactor, which is designed to provide 1,150,000 kv of electric power. (Statement also includes consideration of unit 1). Comments made by DOD, HUD, HEW, USDA, DOI FPC, and various State of Michigan agencies. (NTIS Order # PB-200 545-F) (ELR Order # 61, 153 pages) 6/29.

Quad-Cities Nuclear Power Station, Units 1 and 2. Proposed issuance of an operating license to the Commonwealth Edison Company and the Iowa-Illinois Gas and Electric Company. (Docket Nos. 50-254 & 50-265). Site location is on the east bank of the Mississippi River in Rock Island County, *Illinois.* The plant will utilize 2 boiling-water reactors and turbine generators; each unit to operate at a power of 2511 thermal megawatts. Will result in displacement of wildlife and warming of the Mississippi River. Comments made by Commerce, DOD, DOI, EPA, DOT, and the Office of the Governor of Illinois. (ELR Order #150, 102 pages). (NTIS Order #PB-200 952-F) 7/13.

Proposed issuance of a special nuclear material license to the Jersey Nuclear Company for operation of a Uranium Oxide Fuel Fabrication Plant. (Docket No. 70-1257). Construction of the plant in Richland, *Washington* has been completed and tests have been conducted. Primary environmental considerations associated with operation of plant involve off gases and liquid wastes resulting from the conversion of UF_6 to UO_2. Comments made by USDA, DOD, DOI, & HEW. (NTIS Order #PB-200 953-F) (ELR Order #149, 72 pages) 7/17.

DEPARTMENT OF AGRICULTURE

Contact: Dr. T. C. Byerly, Office of the Secretary, Washington, D.C. 20250 (202) 388-7803.

Forest Service

Final

Title, description, and date

Proposed Gallatin land exchanges Nos. 2 and 3 with Burlington Northern Inc., *Montana*. These exchanges are part of a larger ongoing land exchange program as authorized by the General Exchange Act of 1922. These particular exchanges will result in the U.S. receiving private inholdings totalling 21,479 acres that are of value in establishing the integrity of Yellowstone National Park, the Spanish Peaks Primitive area, the Hyalite Basin, and other areas within the Gallatin National forest. In return, the forest service will relinquish title to 10,243 acres of land within Gallatin National Forest, all of which is located on the West Fork of the Gallatin River west of U.S. 191 between Bozeman and west Yellowstone. Some of the land forfeited by the U.S. will involve acreage to be sold for the "Big Sky" development by Chrysler Realty Corp. Some details of this proposed development are included. Comments made by USDA, DOI, COE, various State of Montana agencies and private citizens (NTIS Order # PB–200 620–F) (ELR Order # 100, 172 pages) 7/1.

Management of French Pete Creek, drainage, Willamette National Forest, *Oregon*. This statement outlines the management objectives of Forest Service for this controversial area on the west slopes of the Cascades. The management plan provides for dispersed recreation and some timber harvesting. Certain areas within the drainage basin will receive special attention, and road development will be kept to the minimum needed for timber harvesting and some public access. Comments made by DOI, HEW and various State of Oregon agencies. (NTIS Order # PB–200 954–F) (ELR Order # 183, 25 pages) 7/16.

Rural Electrification Administration

Draft

Title, description, and date

Hayden Unit 2 (Coal fired generating station): Hayden, *Colorado*. Statement relates to loan application of the Colorado-Ute Electric Association, Inc. to finance a portion of the construction of 250-megawatt generating station. The Salt River Project Agricultural Improvement & Power District is financing the remainder of this additional generating station. The unit will utilize a boiler steam generator-condenser cycle and will consume about 3,000 tons of coal per day. Purpose: to meet increased demand for electrical power through 1981. (NTIS Order No. PB–200 523–D) (ELR Order No. 18, 135 pages) 6/29.

Transmission line: Hayden to Wolcott to Vail, *Colorado*. Statement relates to loan of $9,016,000 to Colorado-Ute Electric Association, Inc., together with funds from other sources for financing about 70 miles of 230 kv transmission line between the Hayden generating station and Wolcott and about 20 miles of kv transmission line between Wolcott and Vail. Will cross agricultural and grazing lands. (ELR Order No. 248, statement 14 pages, Applicant's Environmental Analysis, 102 pages) (NTIS Order No. PB–201–330–D) 7/22.

Soil Conservation Service

Draft

Title and description, and date

North Sector Upper Walnut Watershed: Butler and Chase Counties, *Kansas*. Involves conservation land treatment and construction of dams. (Statement describes work on both the North and South Section). Purpose: reduce erosion, reduce floodwater and sediment damages, etc. (NTIS Order No. PB–200 794–D) (ELR Order No. 116, 15 pages) 7/6.

Winnebago-Bean Creek Watershed, Richardson County, *Nebraska*. Involves conservation land treatment of 3,100 acres over 5-year period, construction of 16 grade stabilization structures, including sediment pools, etc. Purpose: reduce gully erosion and sediment damage. 90 acres will be inundated by detention pools. (NTIS Order # PB–201 254–D) (ELR Order # 237, 12 pages) 7/20.

Yaeger Ditch Project Measure, Southeast Texas Resource Conservation and Development Program Orange County, *Texas*. Involves additional land treatment measures supplemented by about 12,135 ft. of channel work. Of this 10,735 ft. will be to increase capacity of the Yaeger Ditch and about 1,400 ft. will be new construction of a lateral channel. Purpose: reduce flooding, erosion and sediment damage. (ELR Order # 252, 16 pages) (NTIS Order # PB–201 305–D) 7/26.

Headwater—Yellow River Project Measure, Gwinett County Resource Conservation and Development Project, *Georgia*. Consists of a floodwater retarding structure (earth embankment) and a spillway, designed to form a 32 acre sediment pool and work on 11.3 miles of channel (removal of trees and debris). Purpose: reduce flood damages, bank erosion, etc. (ELR Order # 280, 7 pages) (NTIS Order # PB–201 331–D) 7/28.

Final

Title, description, and date

Watershed project, Big Creek Watershed, *Kansas* (Lyon, Greenwood and Woodson Counties). Involves conservation land treatment on 7,000 acres and 9 dams. Possible adverse effects described include elimination of 350 acres of croplands and grasslands due to inundation by the sediment pools. Comments made by COE, DOI, HEW, EPA, Governor of Kansas and Budget Div. Dept. of Administration, State of Kansas. (NTIS Order # PB–200 808–F) (ELR Order # 128, 31 pages) 6/23.

DEPARTMENT OF COMMERCE

Contact: Dr. Sydney R. Galler, Deputy Assistant Secretary for Environmental Affairs, Washington, D.C. 20230 (202) 967–4335.

National Oceanic and Atmospheric Administration

Final

Title, description, and date

Hurricane Modification Research (Project STORMFURY). Project is a collaborative effort by Commerce and Defense. Involves seeding the clouds surrounding the eye of a mature hurricane with silver iodide crystals to release the latent heat of fusion. Current plans for modification experiments call for a minimum of 5 seeding missions with 200 kilograms of silver iodide to be distributed. Purpose: explore ways of reducing intensity of hurricanes. No draft statement received. Comments made by DOI, Army Corps of Engineers, Governor of Texas, and State of Florida Dept. of Air & Water Pollution Control. (NTIS Order No. PB–201 257–F) (ELR Order No. 208, 18 pages) 7/8.

DEPARTMENT OF DEFENSE—DEPARTMENT OF ARMY

Corps of Engineers

Contact: Francis X. Kelly, Assistant for Conservation Liaison, Public Affairs Office, Office, Chief of Engineers, 1000 Independence Ave, SW., Washington, D.C. 20314 (202) 693–6329.

For the reader's convenience we have listed the numerous statements from COE by State in alphabetical order.

Draft

Title, description, and date

Red River Waterway and Red River bank protection project, Mississippi River to vicinity of Index, *Arkansas*. Involves realigning and improving a 9 ft. by 200 ft. navigation channel, bank stabilization work, 9 locks and dams, from the Mississippi River via the Old and Red Rivers to Shreveport, Louisiana, and continuing through Twelve Mile and Cypress Bayous near Dangerville, Texas. Purpose: improve navigation, flood control, irrigation, etc. (NTIS Order # PB–200 799–D) (ELR Order # 104, 37 pages) 7/2.

Big Creek and Tributaries, Lower White River Basin, *Arkansas* (flood control project). Involves straightening, enlarging and clearing 68 miles of channel and also work on 46 miles of upstream tributaries. Purpose: contribute to the economic growth of the basin by assuring flood protection. (NTIS Order # PB–200 789–D (ELR Order # 115, 9 pages) 7/8.

White River navigation project, *Arkansas*. Involves snagging and dredging in order to maintain a low water channel 4½ ft. deep between Newport and Augusta and a low water channel 8 ft. below Augusta. Purpose: enable passage of barges carrying farm commodities. (NTIS Order # PB–932–D) (ELR Order #175, 8 pages) 7/9.

DeQueen Lake, Rolling Fork River, Sevier County, *Arkansas*. Project will consist of a 160 foot high earth filled dam which includes a 12 foot diameter reinforced concrete conduit with grated control works to handle all flows in the river except maximum flood flows. Purpose: reduce annual flood damages occurring downstream from the dam. Project will require relocation of wildlife on Sevier County roads and loss of wildlife on land that is permanently inundated. (NTIS Order #PB–201 256–D) (ELR Order #209, 14 pages) 7/15.

Tijuana River flood control project, San Diego County, *California*. Involves constructing a concrete-lined trapezoidal channel (5 miles), diversion structures, stone jetties, etc. Will require 310 acres to 430 acres of land. Purpose: flood control. May result in a loss of fertile agricultural lands and open space areas to residential and commercial development. (NTIS Order #PB–200 440–D) (ELR Order #25, 52 pages) 6/24.

Trotters Shoals Lake hydroelectric power project, *Georgia* and *South Carolina*. Involves construction of a concrete dam, 4 electrical generating units, public recreation facilities, etc. Requires 59,760 acres of land, some of which will be for public use. Purpose: supply hydroelectric power during periods of peak demand to 3 FPC power supply areas. Will result in loss of natural stream section. (NTIS Order #PB–200 441–D) (ELR Order #26, 8 pages) 7/1.

Peacock Creek (flood control project), Liberty County, *Georgia*. Involves 24.4 miles of channel alignment, snagging and clearing on the creek and swamp areas. Purpose: provide protection from a 2-year frequency flood and supply major drainage on about 1,600 acres. Will remove high quality hardwood from right-of-way areas. (ELR Order #289, 9 pages) (NTIS Order #PB–201 389–D) 7/23.

Spewrell Bluff Lake, Flint River, *Georgia* (flood control project). Consists of land acquisition, construction of a dam 211 ft. high and 2,000 ft. long and an intake works and powerhouse. The lake will have a surface area of 13,300 acres. Purpose: flood control, hydroelectric power, recreation, etc. Will result in loss of free flowing stream fisheries. (Project presently awaiting funding) (ELR Order # 290, 19 pages (NTIS Order # PB–201 390–D) 7/23.

Yatesville Lake flood control project: Lawrence County, *Kentucky*. Involves construction of dam on Blaine Creek. Purpose: water storage which will be used for flood control, water quality control, recreation, and fish and wildlife enhancement. On the 20,800 acres that will be acquired for the project, there are 213 dwellings, 6 churches and 93 cemeteries. (NTIS Order # PB–200 941–D) (ELR Order # 186, 13 pages) 7/6.

Mermentau River navigation project, *Louisiana*. Involves enlarging and realigning channels in the Mermentau River, Lake Arthur and Bayous Nezpique and des Cannes, accumulative length, 43 miles. Project also includes replacing the SH–14 bridge. Purpose: improve navigation for commercial use and also aid in agricultural and development of area. (NTIS Order # PB–200 776–D) (ELR Order # 131, 18 pages) 7/9.

Anacostia River and Tributaries, Prince

George's County, *Maryland* (flood control project). Consists of widening, deepening and realigning channels in the Northwest and Northeast Branches and Indian Creek (20,410 ft). (NTIS Order # PB–200 797–D) (ELR Order # 88, 7 pages) 7/6.

Longview Lake, Little Blue River Lake, *Missouri*. Consists of constructing a dam. Lake will inundate 930 acres of land. Purpose: control run-off from a drainage area 50.3 square miles, recreation, etc. (NTIS Order # PB–200 795–D) (ELR Order # 113, 7 pages) 7/6.

Libby Dam and Lake Koocanusa project, Columbia River Basin, *Montana* (flood control project). This multi-purpose project included in the International Water Resource Development Plan of the Columbia River Basin in this country and Canada has been under construction since 1966. At the present time, it consists of completing construction of the dam (scheduled to be operational as flood control storage by 1973), constructing a powerhouse on the west bank with four 105,000 kW generators (4 additional units to be installed later), etc. The lake will have a surface area of 46,500 acres (28,850 in the United States and 17,650 in Canada). Purpose: provide flood protection, 854,000 kW of firm power initially, and land for public recreation use. (NTIS Order No. PB–200 538–D) (ELR Order No. 45, 43 pages) 6/24.

Loup River flood control, Columbus, *Nebraska*. Consists of constructing a 28,450 ft. levee along the left bank, adding channel riprap, etc. Purpose: provide flood protection. (NTIS Order No. PB–200 796–D) (ELR Order No. 114, 6 pages) 7/8.

Mill Creek Lake, Mill Creek, Scioto River Basin, Delaware and Union Counties, *Ohio*. Construction and operation of a dam and other facilities. Purpose: flood control, recreation and water quality control. It will regulate the runoff from a 181 square mile watershed. Will result in loss of farm land and some types of aquatic and terrestrial habitat. (NTIS Order No. PB–200 949–D) (ELR Order No. 152, 10 pages) 7/6.

Conneaut Harbor navigation project, *Ohio*. Involves construction of an inner dike and dredging entrance and dock front channels. Purpose: provide a small boat mooring area. (NTIS Order No. PB–200 930–D) (ELR Order No. 177, 9 pages) 7/9.

Clayton Lake flood control project, Jackford Creek, *Oklahoma*. (Revised draft—1st draft sent April 6). Involves construction of an earthfill dam and lake, relocation of highway, roads, pipelines, etc. 44 miles of natural stream will be inundated. Purpose: flood control, water supply, recreation, etc. Archeological survey to be conducted as sites near project may contain historically significant artifacts. (NTIS Order #PB–200 810–D) (ELR Order #89, 13 pages) 7/1.

Applegate Lake, Rogue River Basin, *Oregon* (flood control project). Involves constructing a rockfill embankment dam about 232 ft. high and 1,200 ft. long. The lake will be 4.6 miles long with a surface area of 988 acres at maximum pool. Purpose: flood control, irrigation, fish and wildlife enhancement, water quality control, etc. Will result in loss of 5 miles of free-flowing river. (NTIS Order #PB–200 792–D) (ELR Order #90, 20 pages) 7/1.

Beaver Drainage District, Columbia River, *Oregon* (flood control project). Improvements on existing project consists of constructing a new pumping station, relocating discharge lines of a second pumping station, raising and reinforcing the main levee, etc. Purpose: increase flood protection capabilities. (NTIS Order #PB–200 793–D) (ELR Order #118, 37 pages) 7/6.

Shobe Canyon channel clearing project, Heppner, *Oregon*. Involves clearing, snagging and channel reshaping at various intermittent locations throughout a 1-mile reach of Shobe Creek. Purpose: provide temporary solution to flooding caused by thunderstorm runoff. ELR Order #297, 7 pages) (NTIS Order #PB–201 388–D) 7/28.

Wynoochee Lake, Wynoochee River, *Washington*. Involves constructing a central concrete gravity dam 633 ft. long and 175 ft. high. The lake will be 4.4 miles longer with a surface area of 1,140 acres. Purpose: provide water storage for flood control, assure a 385 c.f.s. flow during low period at the Aberdeen diversion for industrial use, etc. Will result in a loss of 5.4 miles of stream fish habitat and anadromous trout spawning. A fishery and hatchery will be developed as replacements. (NTIS Order #PB–200 798–D) (ELR Order #103, 15 pages) 7/1.

Mud Mountain Dam and Reservoir, *Washington* (flood control project). This project has been in operation on the White River since 1948. Present plans call for lining a test section of the 9-ft. tunnel with abrasion-resistant steel. If works will line entire tunnel in 1972. Purpose: minimize downstream turbidity. (NTIS Order # PB–200 931–D) (ELR Order # 176, 11 pages) 7/12.

Final

Title, description, and date

Klutina River flood control project, Copper Center, *Alaska*. Consists of an earthfill levee 4,400 ft. long, etc. Purpose: Provide flood protection from winter glaciation. Comments made by DOI, EPA and various State of Alaska agencies. (NTIS Order # PB–200 544–F) (ELR Order # 58, 21 pages) 6/30.

Hidden Lake, Fresno River, *California*. Initiation of construction consisting of a cemetery relocation in 1971 with construction of an earthfill dam scheduled for 1972. Other aspects of the proposed project include 4 small dikes, downstream clearing and enlarging of channel, levee construction, etc. Possible loss of values associated with riparian habitat and changes of water quality have resulted in a coordinated effort to resolve these issues. Purpose: flood protection, stabilize distribution of downstream water, irrigation, etc. No draft statement received. Comments made by HEW, DOI, Planning Director in Madera County, Resources Agency of Calif. (NTIS Order # PB–200 445–F) (ELR Order # 11, 26 pages) 6/29.

"S" Street channel improvements, Needles, *California*. Involves constructing 3,160 feet of concrete channel and associated diversion structures. Purpose: to protect residential, commercial and public properties against flooding and debris. Comments made by EPA, HUD, DOI, Resources Agency of California and San Bernardino County Flood Control District. (NTIS Order # PB–200 547–F) (ELR Order # 54, 30 pages) 6/30.

New London hurricane protection project, *Connecticut*. Consists of constructing 5,900 ft. of earthfilled rock protected barriers with navigation openings. Purpose: provide protection against hurricane tidal flooding and enable development of area for manufacturing, open space, etc. No draft statement received. Comments made by DOI, EPA, various State of Connecticut agencies and Director of Public Works in New London. (ELR Order No. 251, 19 pages) (NTIS Order No. PB–201 310–F) 7/26.

Martins Fork Lake flood control project, Harlan, *Kentucky*. Involves construction of a concrete-gravity dam 106 ft. high and 465 ft. wide. Lake will have a surface area of 578 acres. No draft statement received. Comments made by DOI, various Commonwealth of Kentucky agencies. (NTIS Order No. PB–200 619–F) (ELR Order No. 101, 15 pages) 7/6.

Willard flood control project, *Kentucky*. Consists of using highway fill as a barrier levee by installing a flap gate on a culvert. Purpose: prevent backwater flooding from the Dry Fork. No draft received. (NTIS Order No. PB–200 604–F) (ELR Order No. 102, 7 pages) 7/6.

Lagoon Pond Navigation project, Martha's Vineyard, *Massachusetts*. Dredging a channel 100 ft. wide and 8 ft. deep and extending a stone jetty 200 ft. Purpose: to provide adequate access to a deep water mooring basin. Comments made by DOI, EPA, Massachusetts Dept. of Natural Resources and Town of Tisbury, Mass. (NTIS Order No. PB–200 542–F) (ELR Order No. 56, 27 pages) 6/30.

Beach erosion project, Oak Bluffs Town Beach, *Massachusetts*. Consists of beach raising and widening and construction of a stone groin at the southern end. Purpose: to provide a greater beach area and protect it from erosion. Comments made by DOI, EPA, COMMERCE, USDA and various Commonwealth of Mass. agencies. (ELR Order No. 249, 22 pages) (NTIS Order No. PB–201 309–F) 7/26.

Esopus Creek flood control project, Hudson River, *New York*. Consists of constructing levees, and floodwalls. Purpose: flood protection for area being developed commercially. No draft statement received. Comments made by DOI, USDA, EPA and various State of New York agencies. (NTIS Order #PB–200 543–F) (ELR Order #57, 28 pages. 7/1.

Wilson Harbor Navigation Project, *New York*. Involves dredging a 6-foot entrance channel through Tuscarora Bay and disposing of dredged materials on State Park land. When sufficiently dry the dredged materials will be used for park purposes. Channel will enable recreation craft to use bay. Comments made by DOI, EPA, State of New York Dept. of Environmental Conservation. (NTIS Order #PB–198 708–F) (ELR Order #263, 17 pages) 7/27.

South Ellenville flood control project, Rondout Creek Basin, *New York*. Consists of constructing levees, concrete chute, floodwalls, etc. Purpose: provide protection of Ellenville from the overflow of North Gully. Will result in loss of natural stream section, etc. (Project presently awaiting funding). No draft statement sent. Comments made by EPA, USDA, DOI, State of New York Dept. of Environmental Conservation, County of Ulster and Mayor of Ellenville. (ELR Order #287, 21 pages) (NTIS Order #PB–201 375–F) 7/27.

Susquehanna River navigation project, Williamsport, *Pennsylvania*. Improvement of navigation depths to provide 5-foot depths and varying widths in the West Branch for a distance of 11.4 miles. Purpose: to improve the safety and quality of recreational navigation by removing 3 sections of obstructions in the main channel. Comments made by DOI, EPA and various Commonwealth of Pennsylvania agencies. ELR Order #250, 13 pages) (NTIS Order #PB–201 311–F) 7/26.

Corpus Christi ship channel, Nueces County, *Texas*. 45 foot navigation project. Deepening and widening various channels and turning basins and constructing a turning point and 2 mooring areas. Comments made by EPA, USDA and various State of Texas agencies. (NTIS Order #PB–200 641–F) (ELR Order #55, 26 pages) 7/1.

Berwind snagging and clearing project, Big Sandy River, West Virginia. Consists of snagging and clearing the channel of Dry Fork, a tributary of Tug Fork. Purpose: increase discharge capacity of the channel in order to reduce flooding. No draft statement received. Comments made by HEW, DOI, State of West Virginia Dept. of Natural Resource and the County Court of McDowell County, West Virginia. (ELR Order No. 286 17 pages) (NTIS Order No. PB–201 376–F) July 27.

Oconto Harbor navigation project, Wisconsin. Involves rehabilitating the stone-filled piling structure by providing a rubble-mound, stone covered breakwater and maintenance of the channel by hydraulic dredging. Purpose: allow for expansion of recreational boating and fishing activities. No draft statement received. Comments made by DOI, HEW, Coast Guard, COMMERCE, various State of Wisconsin agencies and the Izaak Walton League of America. (ELR Order No. 262, 22 pages) (NTIS Order No. 201 329–F) July 27.

Office of the Assistant Secretary

Contact: Col. William P. Gardiner, Chief of Construction Division Office, Deputy Chief of Staff for Logistics, Washington, D.C. (202) OX 4-4380.

Final

Title, description, and date

Project EAGLE—Phase I, disposal of excess bulk mustard stocks at Rocky Mountain Arsenal, *Colorado*. Phase I consists of destroying 3071 tons of bulk mustard stocks by incineration. (Was previously scheduled for ocean burial—OPERATION CHASE.) Discusses air pollution control procedures, etc. No draft statement sent. Comments made by HEW, DOI, EPA, State of Colorado, Denver Regional Council of Governments. (NTIS Order # PB-200 540-F) (ELR Order # 30, 18 pages—draft statement; 267 pages for attachments) 7/2.

Disposal of Anti-Crop Biological Agent at Beale Air Force Base, *California* and Rocky Mountain Arsenal, *Colorado*. Inactivation of agent will be achieved by prolonged exposure to carboxide gas. After inactivation, material will be disposed of by incineration and burial. No draft statement received. Comments made by USDA, HEW, DOI, EPA, and various State and local agencies in California and Colorado. (NTIS Order # PB-201 259-F) (ELR Order # 207, 81 pages) 7/22.

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

Contact: Mr. George Wright, Environmental Clearance Office, Washington, D.C. 20410, (202) 755-8192.

Draft

Title, description, and date

New Community of Maumelle near Little Rock, *Arkansas*. Proposed offer of commitment to guarantee up to $7.5 million in obligations to finance costs of land development over a 20 year period to Maumelle Land Development, Inc. Projected population is between 45,000 and 60,000 on this 5,319 acre site. The site has a 3.5 mile frontage on the Arkansas River. (The Army Corps of Engineers has underway presently a flood control project in this area.) (NTIS Order # PB-201 236-D) (ELR Order # 206, 42 pages) 7/1.

Pike Plaza redevelopment project, Seattle, *Washington*. The City of Seattle is requesting a loan and grant contract for this project. It will involve clearance and redevelopment of 22.81 acres except for a group of buildings comprising the Public Market. Redevelopment will include shops, markets, apartments, office buildings, etc. Purpose: provide more usable urban space, alleviate congested traffic, etc. (NTIS Order # 201 252-D) (ELR Order # 238, 8 pages) 7/21.

Final

Title, description, and date

Statement on HUD's Circular, "Noise Abatement and Control: Departmental Policy, Implementation Responsibilities and Standards." Sets policy on noise abatement and control and interim minimum standards which must be met as a condition for HUD's approval of insurance or assistance applications. Comments made by HEW, DOT, EPA. (NTIS Order # PB-200 450-F) (ELR Order # 12, 12 pages) 6/29.

DEPARTMENT OF INTERIOR

Contact: Office of Communications, Room 7214, Washington, D.C., 20240 (202) 303-6416.

Bureau of Land Management

Draft

Title, description, and date

Outer Continental Shelf Oil and Gas Drainage Sale. Involves offering oil and gas leases for 19 tracts of submerged lands offshore Louisiana in the Gulf of Mexico. (NTIS Order # PB-200 359-D) (ELR Order # 8, 340 pages) 6-26.

Open pit phosphate mining operation, within Los Padres National Forest, Ventura County, *California*. Proposes to issue a preference phospate lease to the U.S. Gypsum Co. The U.S. Gypsum Co. would strip off the overburden (waste rock) before mining the ore. The proposed mining site, comprised of approximately 2433.8 acres, is located between 2 condor sanctuaries. (The condor is on the endangered species list.) (NTIS Order # PB-200 775-D) (ELR Order # 130, 37 pages) 7/12.

Bureau of Reclamation

Draft

Title, description, and date

San Angelo cumulus cloud seeding project, San Angelo, *Texas*. Project consists of warm and cold cloud seeding over a 3-year period. Will seed clouds primarily with sodium chloride but a few will be seeded with silver iodide. Purpose: to produce greater rainfall in Concho River Basin in order for soil to support crop growth. (NTIS Order # PB-200 537-D) (ELR Order # 46, 20 pages) 7/2.

O'Neill Unit, Pick-Sloan Missouri Basin Program, *Nebraska*. Project consists of constructing Norden Dam and Reservoir, an on-stream regulatory and storage facility, Springview pumping plant; 362 miles of canals and laterals, etc. Purpose: provide irrigation to 77,000 acres, flood control, etc. (NTIS Order #PB-200 773-D) (ELR Order #129, 16 pages) 7/12.

Pecos River Basin Water Salvage project, *New Mexico* and *Texas*. (Revised draft—1st draft sent 3/31/71). Involves clearing saltcedars and other undesirable phreatophytes (they absorb a lot of water). Estimated acreage still to be cleared is 29,000. Clearing is done with chemical sprays and by mechanical means. A major concern is the disruption of nesting areas for the mourning dove. Project began in 1966, is now more than 60% complete. Comments made on 1st draft by Army Corps of Engineers, various Bureaus within DOI, EPA, FPC, COMMERCE, USDA, various State of Texas agencies and State of New Mexico agencies. (NTIS Order #PB-201 253-D) (ELR* pages) 7/12.

Black Mesa Coal Mining Operation, Navajo Project, *Arizona*. (Revised draft—1st draft sent 1/13/71). Peabody Coal Company has leased 64,858 acres of land from the Navajo and Hopi Indians to develop a coal mine for supplying fuel to the Navajo and Mohave Steam Generating Stations. Strip mining methods to be used. Will involve loss of grazing land, relocation of 53 Navajo families, use of water from a dep ground water supply, etc. (ELR Order #247, 70 pages) (NTIS Order #PB-201 336-D) 7/22.

Final

Title, description, and date

Colorado River Basin Pilot Project for weather modification. Located in San Juan Mountain area, southwestern *Colorado*. Seeding of 1,300 square mile area with 250 kilograms of silver iodide. To be continued for a period of 4 years. Snowfall will be increased by 16%. Purpose: to provide scientific and engineering evaluations of snowfall increases as a result of cloud seeding techniques. Comments made by DOT, DOD, COMMERCE, USDA, National Science Foundation, National Center for Atmospheric Research and various State of Colorado agencies. (NTIS Order #PB-201 086-F) (ELR Order #196, 32 pages) 7/16.

Lower Teton Division, Teton Basin project, *Idaho*. Includes construction of Teton Dam on the Teton River. A 17 mile long reservoir will form. At the dam, a combined power and pumping plant will be constructed. A fishery in the canyon portion of the river is now one of the finest in Idaho and contains a self-sustaining population of cutthroat trout. Dam and reservoir will eliminate summer and winter range utilized by big game animals. Purpose: irrigation, power, flood control. Comments made by Army Corps of Engineers, USDA, FPC, Commerce, DOT, private citizens, local businessmen and organizations, various State of Idaho agencies, etc. (NTIS Order No. PB-198 688-F) (ELR Order No. 223, 94 pages) 7/23.

Bureau of Sport Fisheries and Wildlife

Title, description, and date

San Marcos National Fish Hatchery: Hays County, *Texas*. Facilities will be located on 126 acres of land, formerly part of the Southwest Texas State University. Will consist of 52 ponds, associated drains and supply lines, a water treatment and recirculation system, etc. Purpose: to serve as a national fish hatchery and as a development center for new fish rearing techniques. Comments made by Texas Parks and Wildlife Dept. (NTIS Order No. PB-199 463-F) (ELR Order No. 60, 10 pages) 6/30.

Office of Coal Research

Draft

Title, description, and date

Coal gasification plant, Homer City, *Pennsylvania*. Building and operating pilot plant which will use the BI-GAS process for testing purposes in converting coal to synthetic gas. Will operate for 2 or 3 year period. (NTIS Order No. PB 200 800-D) (ELR Order No. 122, 19 pages) 7/7.

Office of the Secretary

Draft

Title, description, and date

Proposed "prototype" oil shale leasing program: *Colorado, Utah* and *Wyoming*. Involves public and industry participation in selecting up to 6 oil shale tracts, 2 in each of the above states. These tracts will be offered for lease by sealed, competitive bid late in 1972. After specific sites have been selected and core drilling tested, a complete draft will be made. In addition to this preliminary draft statement, a program statement describing the proposal and reports on the potential environmental impact by the 3 States are attached. (NTIS Order No. PB-200 436-D) (ELR Order No. 17, 116 pages—statement) NTIS will charge $6.00 for all 5 reports. 6/29.

Final

Title, description, and date

Exploratory drilling operations on Federal oil and gas leases, Santa Barbara Channel off the *California* coast. Program began in 1967. 70 exploratory wells have been drilled. Proposed administrative action is the issuance of permits to allow further exploratory drilling. Comments made by EPA, Coast Guard, DOD, Commerce, various state and local agencies of California, concerned individuals, industry and associations. (ELR Order No. 222, 97 pages—also all title) (NTIS Order No. PB-198 979-F) 7/30.

DEPARTMENT OF TRANSPORTATION

Contact: Martin Convisser, Director, Office of Program Co-ordination, 400 7th Street, S.W., Washington, D.C. 20590 (202) 462-4357.

For the reader's convenience we have listed the numerous statements from DOT by State in alphabetical order.

Federal Aviation Administration

Draft

Title, description, and date

Airport project, Klawock, *Alaska*. Proposes development of a new airport involving land acquisition, construction of a landing strip, etc. (NTIS Order # PB-200 363-D) (ELR Order # 2, 8 pages) 6/29.

Nut Tree Airport, Vacaville, *California*. Involves acquisition of land, extending, overlaying and widening of runway and taxiway, channel relocations, runway light system, etc. (NTIS Order # PB-201 226-D) (ELR Order # 202, 27 pages) 7/19.

Monmouth Municipal Airport, Warren County, *Illinois*. Consists of obtaining reim-

*Order by title, department and agency.

bursement for land and a navigation easement. Action will make the airport a part of the Federal Aid System of Airports. (ELR Order # 261, 75 pages) (NTIS Order # PB-201 306-D) 7/27.

Wheaton Municipal Airport project, Wheaton, *Minnesota*. Involves surfacing runway, connecting taxiway and installing lights along runway and VASI, etc. (NTIS Order # PB-200 364-D) (ELR Order # 1, 16 pages) 6/29.

McCarran International Airport Project, Las Vegas, *Nevada*. Involves land acquisition, runway extension, etc. Purpose: accommodate larger aircarrier aircraft. (NTIS Order No. PB-200 801-D) (ELR Order No. 87, 30 pages) 7/61.

Final

Title, description, and date

Grand Canyon National Park Airport, Grand Canyon, *Arizona*. Extension of runway and taxiway, construction of a fire and rescue equipment building, etc. Purpose: to enable Air West to use DC-9's instead of F-27's. Comments made by USDA, DOI, DOA, EPA, HEW, HUD, DOC, and Four Corners Regional Commission and Arizona Dept. of Aeronautics. (NTIS Order No. PB-200 600-F) (ELR Order No. 50, 44 pages) 7/1.

Arapahoe County Airport, Denver, *Colorado*. Includes land acquisition, taxiway construction, etc. Purpose: provide space for future runway, noise abatement, and to prevent airport encroachment. Comments made by HUD, DOI, ARMY-COE, FPC, USDA, COMMERCE, EPA. (NTIS Order No. PB-198 984-F) (ELR Order No. 53, 46 pages) 6/30.

Marion County Airport, Buena Vista, *Georgia*. Includes land purchase, runway and taxiway construction, installation of medium intensity lighting, etc. Comments made by HEW, EPA and Bureau of State Planning & Community Affairs. (NTIS Order No. PB-198 982-F) (ELR Order No. 148, 18 pages) 7/9.

Airport project at Algona, *Iowa*. Involves runway extensions, lighting, etc. Purpose: to accommodate twin engine aircraft and to make it an all weather airport. Comments made by DOI, USDA, various State of Iowa agencies. (NTIS Order No. PB-199 329-F) (ELR Order No. 170, 34 pages) 7/13

Airport project at Eureka, *Kansas*. Extending runway and low intensity lighting, etc. Purpose: to serve larger aircraft. Comments made by USDA, DOI, various State of Kansas agencies. (NTIS Order # PB-198 997-F) (ELR Order # 92, 14 pages) 7/2.

McPherson City County Airport Project, McPherson, *Kansas*. Consists of the final phase of paving the runway and taxiway and extending the north end of the runway, etc. Comments made by USDA, EPA, DOI, various State of Kansas agencies. (NTIS Order # PB-199 603-F) (ELR Order 154, 22 pages) 7/13.

Oakland-Pontiac Airport Project, *Michigan*. Includes land acquisition, E/W runway and taxiway construction, ramp and runway extension, etc. Will mean increase in noise level for some houses near the north boundary of the airport. Comments made by State of Michigan agencies and local agencies. (NTIS Order # PB-199 234-F) (ELR Order # 153, 23 pages) 7/13.

Sedalia, *Missouri* airport project. Involves land acquisition, construction of new runway, installation of medium intensity lighting, etc. Purpose: to accommodate larger aircraft. Airport will be especially useful during construction of a safeguard installation nearby. Comments made by USDA, DOI, various State of Missouri agencies. (NTIS Order # PB-198 876-F) (ELR Order 169, 30 pages) 7/13.

Glacier Park International Airport, Kalispell, *Montana*. Involves 1,000 by 150 foot extension to instrument runway. Increased frequency of Air West flights not anticipated. Comments made by DOI, Flathead County Airport Board, Morrison-Maierle, Inc, and State of Montana Aeronautics Commission. (NTIS Order # PB-200 598-F) (ELR Order # 52, 13 pages) 6/30.

Mifflin County Airport, Reedsville, *Pennsylvania*. Involves runway extension and widening to incorporate increasing number of larger corporate aircraft. Comments made by DOT, COMMERCE, USDA, EPA, Fisher Electronics, Inc., Sitkin Smelting & Refining, Inc. Standard Steel, etc. (NTIS Order # PB-200 599-F) (ELR Order # 51, 21 pages) 7/1.

Everett-Stewart Airport project, Union City, *Tennessee*. Includes acquisition of 17 acres, construction of a 100' x 100' extension to runway, runway resurfacing, taxiway construction. Present airport is unable to accommodate the larger corporate and business jet aircraft. Comments made by ARMY-COE, EPA, DOT, HEW, various State of Tennessee agencies. (NTIS Order # PB-199 233-F) (ELR Order #94, 23 pages) 7/2.

Hayward Municipal Airport, Sawyer County, *Wisconsin*. Involves runway extension and overlay, taxiway construction, relocation of town road, etc. Purpose: allow larger aircraft and business jets to use the facility. Comments made by various State of Wisconsin agencies, USDA, DOI, ARMY-COE (NTIS Order # PB-198 889-F) (ELR Order # 147, 23 pages) 7/8.

Airport project, Mosinee, *Wisconsin*. Involves construction of parallel taxiway, cross runway, runway extension, at Central Wisconsin Airport. Comments made by USDA, DOT, DOI, various local agencies. (NTIS Order # PB-200 950-F) (ELR Order # 156, 29 pages) 7/13.

Federal highway administration

Draft

Title, description, and date

Federal Aid Secondary Route No. 62-12: Tallapoosa County, *Alabama*. Project consists of bridge replacement over the South Fork of Sandy Creek. New structure will be adjacent to and west of present bridge. Project S-6212( ). (NTIS Order No. PB-200 531-D) (ELR Order No. 39, 6 pages).

FAS Route 5910: Shelby County, *Alabama*. Reconstruction provides for widening and realigning portion of route 3 miles west of Helena and .7 mile south of the Shelby County-Jefferson County Line. Involves replacing 2 bridges. Highway project S-5910 (101). (NTIS Order No. PB-200 767-D) (ELR Order No. 75, 9 pages. 7/2.

I-59 & I-459: Jefferson County, *Alabama*. I-59 consists of constructing 10.5 miles from Bessemer to Fairfield; I-459 consists of constructing a connective highway between Old Route 11 and I-59. Project Nos. I-59-1(29) (34) (35) & I-459-4( ). (NTIS Order No. PB-201 233-D) (ELR Order No. 211, 15 pages). 7/16.

FAS Route 17: Chilton County, *Alabama*. Replacement of gravel surfaced road with 2-lane bituminous road to serve as a connection between US-31 and FAS Route 12. Highway project S-1117(102). (NTIS Order No. PB-201 249-D) (ELR Order No. 228, 6 pages). 7/21.

Alabama Highway 20: Lauderdale County, *Alabama*. Construction of a 2-lane, ultimate 4-lane section of highway on new location beginning at intersection with the Natchez Trace Parkway northwest of Florence to a point 1.5 miles southeast of McGee (9.3 miles). Highway project F-401( ), State project 202-E. (ELR Order No. 293, 9 pages). (NTIS Order No. PB-201 397-D). 7/26.

US-43: Washington County, *Alabama*. Widening road to 4-lanes from Calvert to Leroy (23 miles). Approximately 40 families and 30 businesses will be relocated. Highway project S-24-D. (ELR Order #291, 6 pages) (NTIS Order #PB-201 395-D) 7/27.

Wasilla-Palmer Highway: Widening and improving horizontal and vertical alignment from intersection with Anchorage to Fairbanks Highway (FAP Route 35) in Wasilla, Alaska to intersection with Glenn Highway (FAP Route 42) near Palmer, *Alaska*. Highway project S-0572(1). (NTIS order # PB-200 762-D) (ELR Order # 67, 12 pages) 7/2.

I-10 (Hohokam Expressway): Maricopa County, *Arizona*. Construction of about 2.5 miles of highway from 48th Street Interchange and terminating at junction of 44th St. and Washington Street. Also includes construction of a bridge to span the Salt River. 4(f) determination attached as route requires use of a portion of Park of Four Waters. Highway Project F-034-(1) and F-043-1(3). (NTIS Order #PB-201 093-D) (ELR Order #200, 30 pages) 7/8.

Colorado River Bridge (Joint Project): Yuma County, *Arizona*. Construction of the dual-span Yuma Bridge and Approaches (3,000 feet). Structure is portion of I-8, connecting the States of California and Arizona. Highway project I-8-9(2). (ELR Order # 255, 14 pages) (NTIS Order # PB-201, 301-D) 7/26.

US-270: Hot Springs County, *Arkansas*. Upgrading from 2- to 4-lane non-controlled access highway. Located between Town Creek in Malvern and SH-51. Highway projects F-016-2(16) and U-016-2 (17). (NTIS Order # PB-200 783-D) (ELR Order # 140, 8 pages) 7/9.

Ferrel-La Brucherie Road (FAS 1261): Imperial County, *California*. Completion of highway construction between SH-98 and Wahl Road (approximately 3 miles) near city limits of El Centro. Highway project S-1261(3), 11-Imp-1261-CR. (NTIS Order # PB-200 764-D) (ELR Order # 72, 4 pages) 6/30.

Route 4: Alpine County, *California*. Development of a controlled access highway between the North Fork of the Mokelumne River and Route 89 (17.9 miles). Most of the project is within either Stanislaus or Toiyabe National Forests. Highway project 10-ALP-4, 13.5/32.0. (NTIS Order # PB-201 242-D) ELR Order # 232, 17 pages) 7/23.

State Route 15: San Diego, *California*. Project consists of converting a 4-lane highway to a freeway. Construction runs from I-805 to just south of I-8. 4(f) determination to be forwarded as route requires parklands. Highway project FAP-95, 11-SD-15, 3.2/6.2. (ELR Order # 278, 9 pages) NTIS Order # PB-201 333-D) 7/27.

Colorado State Highway 82: Garfield County, *Colorado*. Widening 1.9 miles of highway between Carbondale and Basalt (from a 2- to 4-lane facility). Highway project S 0082(3). (NTIS Order # PB-200 939-D) (ELR Order # 185, 9 pages) 7/15.

I-84: Widening and realigning highway in Newtown and Southbury, *Connecticut* (2.5 miles). Involves constructing a second bridge over the Housatonic River for the westbound lane, adding a westbound lane in Newtown, etc. Highway project I-84-2(44)15; State project 96-114 & 115. (NTIS Order # PB-200 805-D) (ELR Order # 124, 23 pages) 7/7.

I-86: Adding additional travel lane in each direction in Ashford and Union, *Connecticut* making it a 6-lane facility (7.2 miles). Highway project P.E. I-86-2(26)16. (ELR Order #245, 73 pages) (NTIS Order # PB-201 299-D) 7/20.

Route 8: Seymour, Beacon Falls, and Naugatuck, *Connecticut*. Project involves improvement and relocation between the vicinity of North Street in Seymour and the vicinity of Route 63 in Naugatuck (5.8 miles). 4(f) determination attached as route requires land from Naugatuck State Forest (presently being considered as recreational area). (ELR Order # 256, 37 pages) (NTIS Order # PB-201 302-D) 7/23.

South Wilmington Connector: Wilmington, *Delaware*. Discusses 3 alternate corridors (River Route, 4th St., and Front St.). Purpose: serve as a direct connection between

the Civic Center and I–95. (NTIS Order #PB–200 766–D) (ELR Order #74, 33 pages) 7/7.

US–93 (SR–30): Walton County, *Florida*. Widening of highway to 4 lanes beginning at the Okaloosa-Walton County Line and terminating at the intersection with SR–30–A (7.4 miles). Purpose: to serve as connector for ultimate plan of multi-laning US–98 from Pensacola to Panama City. Highway project F–017–1(26). NTIS Order #PB–200 534–D) (ELR Order #42, 25 pages) 6/28.

State Road 424—A (Fairbanks Avenue): Orange County, *Florida*. Improvement of highway from SR–400 (I–4) to SR–15–600 (US 17–92) (1 mile). Involves construction of a median strip, curb system, sidewalks, and installation of storm water treatment, etc. Highway project US–707(1). (NTIS Order #PB–200 524–D) (ELR Order #32, 40 pages) 6/29.

Maitland Boulevard interchange and connector road (SR–528): Orange County, *Florida*. Provides for an interchange with SR–400 (I–4) between existing interchange at SR–438 (Lee Road) and SR–436 and a connecting roadway corridor from SR–400 (I–4) to SR–600 near Maitland. Highway project UI–4–2(65)108, State project 75280–1438 and 75504–1601. (NTIS Order #PB–200 536–D) (ELR Order #44, 50 pages) 6/29.

US–92 (SR–600): Volusia County, *Florida*. Upgrading of 10.4 miles of highway from 2- to 4-lanes between S–430A (Kepler Rd.) and the junction of SR 400 (I–4) and the SR 600 connector. Highway project F–010–1(19), State project 79060–1509. (NTIS Order #PB–200 769–D) (ELR Order #77, 30 pages) 6/30.

US–41 (SR–90): Dade County, *Florida*. Widening of Tamiami Trail from 2-lane, one-way corridor to 4-lane, 2-way corridor. Construction will run from the Palmetto Expressway, along southwest 8th Street, east to US Route 1 (8 miles). Highway project U–012–2 (10) F–012–2(11); State project 87120–1503. (NTIS Order # PB–200 750–D) (ELR Order # 80, 12 pages), 7/2.

I–75: Manatee County, *Florida*. Construction of 8.3 miles of highway from US–301 to US–19. Portion of highway that will ultimately connect Tampa and Miami. Highway project I–75–6(1)375. State project 13075–1405, 1406. (NTIS Order # PB–201 092–D) (ELR Order # 201, 7 pages), 7/9.

State Road 424 (Edgewater Drive): Orange County, *Florida*. Upgrading from 2-to-4-lanes of 1.9 miles of highway from Par Avenue to Lee Road in Orlando. Roadway involves 2 consecutive projects. Highway projects US–432(2) & US–432(3). (NTIS Order # PB–201 089–D) (ELR Order # 191, 22 pages), 7/16.

US–319 (State Road 377): Franklin County, *Florida*. Replacement of existing timber-concrete bridge over Ochlockonee River with modern concrete span (0.17 mile for bridge and approaches). (NTIS Order # PB–201 095–D) (ELR Order # 195, 25 pages), 7/16.

I–185: Muscogee County, *Georgia*. Construction of new highway from Double Churches Road southerly to the Columbus-Manchester Expressway. Project is portion of highway that will connect Atlanta and Columbus. Highway project I–185–1( ). (NTIS Order # PB–200 529–D) (ELR Order # 37, 15 pages), 6/28.

SR–155: DeKalb County, *Georgia*. Relocation of route to provide a bypass of the central business district of Decatur (1.8 miles). Will involve relocation of a church. Highway projects SU–865(4) and SU–866(5). (NTIS Order # PB–200 768–D) (ELR Order # 76, 57 pages), 7/6.

Highway 341: Walker County, *Georgia*. Upgrading and widening route along existing alignment beginning at a point just southwest of Chickamauga, extending northerly through the city to a point near the northwest city limits. Highway project S–1025(1). (NTIS Order #PB–200 945–D) (ELR Order #163, 34 pages) 7/8.

Birdsville Road: Jenkins County, *Georgia*. Reconstruction of road beginning at SR–17 extending northerly and northwesterly via Birdsville and ending at S–1320. A 4(f) document is attached since route goes the Birdsville Plantation. Highway project S–2114 (PR 2832–C). (ELR Order #295, 10 pages) (NTIS Order #PB–201 396–D) 7/16.

Cherokee Road Extension (PR 700): Cobb County, *Georgia*. Construction of a 4-lane, free access facility linking Cherokee St. in Smyrna to Windy Hill Road at I–75 interchange. Highway project PR 700 (S–2565). (ELR Order #299, 17 pages) (NTIS Order #PB–201 400–D) 7/16.

Waycross Bypass, US–82 and SR–50: Ware County, *Georgia*. The statement relates to 3 highway projects. *F–119–1(1)* (Waycross Bypass) provides for a bypass route for US–1, US–23, US–82, SR–4, SR–50, and SR–38 around Waycross (6.4 miles). *F–105–1(6)* involves relocation of US–80 and SR–50 beginning northwest of Waresboro to intersection with the Waycross Bypass (3.5 miles). *F–026–2(13)* provides for improving the geometrics of US–82—SR–50 from intersection with SR–158 to point northwest of Waresboro (2.2 miles). (ELR Order #296, 5 pages) (NTIS Order #PB–201 392–D) 7/22.

I–75: Cobb-Cherokee-Bartow Counties, *Georgia*. (Revised draft—1st draft sent 2/10). The first 102 statement related to a proposed corridor for closing a 20.3 mile gap existing in I–75 from Robert Road in Cobb County to US–411 in Gordon County. Due to opposition to this proposed routing, the Georgia Highway Dept. restudied the project, asking the assistance of the National Recreation and Park Association, the Institute of Ecology, Univ. of Ga. and many others. The new recommended route ("T") which would go through an area already changing from open to built-up lands was based on the recommendations of these groups and individuals and the studies done on the environmental impact. A 4(f) determination is included since project requires use of public lands known as "Blockhouse." (NTIS Order #PB–201 337–D) (ELR Order #260, 302 pages) 7/23.

US–95: Adams County, *Idaho*. Construction of 7.3 miles of highway beginning just south of the Alpine Store area and ending one mile south of Cottonwood Creek. Involves 2 projects: Mesa North which is to be constructed first, with Mesa South to be constructed as funds are available. New concrete bridge will be constructed over Middle Fork of the Weiser River. Highway projects are, respectively, F–3112(21) & F–3112(30). (NTIS Order #PB–200 533–D) (ELR Order # 41, 20 pages) 6/24.

FAS Route 613: Relocation and improvement of route beginning near the corner of College & Johnson Sts. in Jacksonville, *Illinois* and extending northeasterly for about 1 mile to a connection with the existing road. Highway project S–613(103). (NTIS Order # PB–200 444–D) (ELR Order # 21, 16 pages) 6/29.

FAS Route 765: Madison County, *Illinois*. Proposed construction of 2-lane highway between Illinois Route 111 and Bluff Road. Highway project S–765(104). (NTIS Order # PB–200 752–D) (ELR Order #120, 14 pages) 7/9.

Illinois 43: Madison County, *Illinois*. Reconstruction and widening of route from west of Illinois 159 to 0.5 mile southeast of Illinois 3 (3.9 miles). Highway project F–368. (NTIS Order # PB–201 225–D) (ELR Order # 203, 30 pages) 7/20.

Supplemental Freeway FAP Route 408: Sangamon & Morgan Counties, *Illinois*. Freeway construction with full access control from interchange with US–36–54 near Curran to an interchange with US–67 south of Jacksonville. (ELR Order # 294, 244 pages) (NTIS Order # PB–201 394–D) 7/23.

West Sixth Street Bridge: Grant County, *Indiana*. Replacement of 56-ft concrete bridge over Back Creek and improvement of approaches. 4(f) determination attached as project would require land from a public park owned by the Town of Jonesboro. Highway project S–1068(1). (NTIS Order # PB–201 235–D) (ELR Order # 224, 10 pages) 7/16.

SR–26: Tippecanoe County, *Indiana*. Widening road to a 4-lane divided expressway extending eastward from its intersection with U.S.–52 Bypass of Lafayette to the interchange of I–65 with SR–26 (1.8 miles). Highway project S–271(7). (NTIS Order # PB–201 238–D) (ELR Order # 205, 7 pages) 7/19.

US–31: Miami, Fulton, & Marshall Counties, *Indiana*. Widening and upgrading highway, partially on new location, from north of Peru to south of Plymouth (32.5 miles). A 10.4 mile portion of construction from 1 mile south of SR–5 to south of SR–110 is a different highway project. Highway projects F–85(27), F–85(29), & F–85(23). (NTIS Order # PB–201 230–D) (ELR Order # 204, 13 pages) 7/19.

I–380: Cedar Rapids, *Iowa*. Construction of 6-lane segment of highway from point near 10th St. NE and J Ave. NE. (NTIS Order # PB–200 765–D) (ELR Order # 71, 9 pages) 7/2.

I–670: Wyandotte County, *Kansas*. Construction of 1.6 miles of new highway from I–70 near Mill St. easterly to the Kansas-Missouri line. All but 350 ft. of the construction will consist of viaduct or bridge structures. Proposed segment of highway will provide interchange with I–70. Highway project 670–105 I–670–6(25). (NTIS Order # PB–200 784–D) (ELR Order # 143, 44 pages) 7/6.

I–35: Lyon County, *Kansas*. Construction of 4-lane divided facility beginning near east city limits of Emporia and continuing easterly for 9.7 miles. Requires 550 acres of land. Highway project 35–56 I–35–2(3)133. (NTIS Order # PB 200 772–D) (ELR Order # 125, 8 pages) 7/7.

K–177: Chase County, *Kansas*. Replacement of bridge over the Cottonwood River and widening road to 4-lanes through Cottonwood Falls (1.2 miles). Highway project 177–9 S–1167(13). (NTIS Order # PB–200 803–D) (ELR Order # 123, 24 pages) 7/7.

US–69 (Switzer Bypass): Johnson County, *Kansas*. Construction of 2.9 miles of highway from 127th St. northeast to point just south of I–435. Involves construction of 10 bridges. Switzer Rd. will be relocated to the west of 111th St. Highway project (SF)69–46 F 083–3(20). (NTIS Order # PB–201 251–D) (ELR Order # 234; 11 pages) 7/22.

Paris Bypass (Section 2): Bourbon County, *Kentucky*. Construction of 2-lane (ultimate 4-lane) highway around city of Paris for through traffic on US–27, US–227, US–68 and US–460. Highway project F 558(1) & S 67(6). (NTIS Order # PB–200 749–D) (ELR Order # 81, 7 pages) 7/2.

I–410 New Orleans Loop Route: Orleans Parish, *Louisiana*. Construction of a 6-lane controlled access segment (generally on Paris Road) beginning at the Mississippi River Gulf Outlet and ending at I–10 (2.6 miles). Will cross some swamps and marshlands. (NTIS Order # PB–200 749–D) (ELR Order # 281, 12 pages) 7/27.

Maryland Route 235: St. Mary's County, *Maryland*. Widening and constructing dual highway from point about 400 ft. northwest or Rue Purchase Road to Peggs Lane (1.4 miles). Highway project 414–15–571. (NTIS Order # PB–200 760–D) (ELR Order # 68, 5 pages) 7/2.

Maryland Route 235: St. Mary's County, *Maryland*. Widening route from Laurel Grove, continuing in a southerly direction on the west side of Summerseat Village and Oakville, and terminating at the beginning of the present dual highway in Hillville (3.9 miles). Highway project SM 414–005–571. (NITS Order # PB–200 761–D) (ELR Order # 69, 9 pages) 7/2.

Route 11 & West Wilson Boulevard: Washington County, *Maryland*. Project provides for elimination of 2 crossings of the Norfolk & Western Railroad at Virginia Ave & Wilson

Blvd. and relocation of Route 11, southeast of existing route—and relocation of Wilson Blvd., just north of present location in Hagerstown. Highway project US–UGS 9465 (1). (NITS Order # PB–210 241–D) (ELR Order # 231, 12 pages) 7/23.

I–391: Chicopee, *Massachusetts*. Construction of 6-lane highway elevated 23 feet above ground level in the Willimansett section of Chicopee. This 1,500 foot viaduct will go from the Boston and Maine Railroad tracks to the Connecticut River. Highway project I–391–3 (1)8. (NTIS Order # PB–200 522–D) (ELR Order # 31, 8 pages draft, 72 pages Joint-Use Study) 6/29.

US–131 Freeway: Miscota and Osceda Counties, *Michigan*. Freeway construction to serve as major travel route between metropolitan areas located in southern Michigan, northern Indiana and Illinois and recreation areas, etc. Evaluates 3 alternative corridors. (NTIS Order # PB–200 937–D) (ELR Order #180, 38 pages) 7/12.

Trunk Highway 94: Stearns County, *Minnesota*. Involves construction of a 4-lane freeway from just northeast of Collegeville to just southeast of St. Augusta (18 miles). Represents last segment of corridor to connect Minneapolis to the west State line. Highway propect F 094–2( ). (ELR Order # 254, 17 pages) (NTIS Order # PB–201 307–D) 7/26.

Route 63: Phelps County, *Missouri*. Relocation and widening route beginning at the Maries-Phelps County Line just north of Rolla and extending southerly for about 5.6 miles. (NTIS Order # PB–200 936–D) (ELR Order # 178, 4 pages) 7/12.

Routes 210, 10 & 13: Clay & Ray Counties, *Missouri*. *Route 210* provides for an initial 2-lane, ultimate 4-lane limited access facility, running from east of Route JJ to relocated Route 10 southwest of Richmond (15 miles). *Route 10* provides for a 2-lane limited access facility, running from just east of Route C to 2.7 miles east of Route 13. *Route 13* provides for a 2-lane limited access facility north of Richmond, a 4-lane limited access facility through Richmond to the interchange with Route 10 and an initial 2-lane, ultimate 4-lane limited access facility south of Route 10 (4 miles). Highway projects, respectively, 4–P–210–35, 4–P–10–28, & 4–P–13–29. (NTIS Order # PB–201 228–D) (ELR Order # 219, 6 pages) 7/21.

Route 13: Stone County, *Missouri*. Construction/upgrading of highway from just north of Route 248 southerly to 1.2 miles south of Bailey Creek. Involves replacement of 3 bridges. (NTIS Order #PB–201 246–D) (ELR Order #225, 6 pages) 7/23.

I–90: Mineral County, *Montana*. Construction of 4-lane highway from 6.4 miles west of to 1.3 miles east of St. Regis (7.7 miles). 4(f) determination to be submitted in the future as land for an undeveloped park will be required. (NTIS Order #PB–200 535–D) (ELR Order #43, 62 pages) 6/25.

Sixth Street Southwest: Great Falls, *Montana*. Reconstruction of 1.3 miles, including the replacement of the present bridge over Sun River. Highway project U–FG 218(10). (ELR Order #288, 16 pages) (NTIS Order # PB–201 399–D) 7/28.

Nebraska Project S–37(11): Keith County, *Nebraska*. Construction consists of 1 mile of spur roadway connecting I–80 and US–30. Highway project S–37(11). (NTIS Order # PB–200 527–D) (ELR Order #35, 11 pages) 6/29.

I–80 (Sidney Airport-East Sidney) and Highway N–19 (Sidney South): Cheyenne County, *Nebraska*. I–80 involves constructing 4-lane divided facility from Sidney Airport to East Sidney Interchange (3 miles). Highway N–19 consists of relocating road north of Airport and ending on US–385 & N–19 east and north of Sidney (5.4 miles). Highway project I–80–2(4) & F–130(15). (NTIS Order # PB–201 237–D) (ELR Order # 214, 12 pages) 7/19.

I–80: Constructing highway to connect 2 segments of I–80 near Winnemucca, *Nevada* (6.9 miles). (NTIS Order # PB–200 934–D) (ELR Order #173, 9 pages) 7/14.

I–78: Warren County, *New Jersey*. Construction runs from New Jersey-Pennsylvania line to Still Valley. 4(f) determination attached as route requires 8.6 acres of undeveloped recreation area. Highway project I–78–1(0)O. (NTIS Order # PB–200–532–D) (ELR Order #40, 30 pages) 6/30.

I–195: Monmouth and Ocean Counties, *New Jersey*. Construction of 13.1 miles of highway from County Route 527 to the intersection of SH–34 and SH–38. 4(f) determination attached as route requires 37 acres of land from Allaire State Park. Highway project I–195–8(1)82. (NTIS Order #PB–201 234–D) (ELR Order #218, 35 pages) 7/21.

Amador Avenue: Las Cruces, *New Mexico*. Widening of 2 miles of highway from I–10 to Alameda Street. Highway project US–1136(3). (NTIS Order #PB–201 243–D) (ELR Order #223, 16 pages) 7/23.

US–56: *New Mexico*. Upgrading highway from 5.5 miles southwest of Clayton northeasterly for what appears to be 4.5 miles. Highway project S–1441(5). (ELR Order #279, 5 pages) (NTIS Order # PB–201 334–D) 7/27.

County Road 19, County Road 60 and New York State Route 17: Cattaraugus County, *New York*. Reconstruction of portions of these 3 routes between relocated West Five Mile Rd. in Allegany and SR–16 in Olean. Highway project PIN 5240.00. (NTIS Order #PB–200 397–D) (ELR Order #22, 9 pages) 6/28.

New York Routes 347 & 25: Suffolk County, *New York*. Construction consists of upgrading to expressway standards 8 miles of Route 347, between Browns Road and Route 25A. Also included in project is reconstruction of 2 miles of Route 25, from Sunny Road to Hawkins Road. Highway projects PIN 0041.00 & PIN 0054.01. (NTIS Order #PB–200 530–D) (ELR Order #38, 11 pages) 6/30.

Nassau Expressway: *New York*. Involves 4 highway construction contracts. Contracts 3 and 4A provide for constructing a multi-lane expressway facility from Van Wyck Expressway to the New York City-Nassau County line (3.9 miles); Contract 4 (Rockaway Blvd.) provides for relocation and widening road between Springfield Blvd. and the New York City-Nassau County line (1.6 miles); and Contract 5 provides for a westbound roadway portion of a multi-lane expressway facility between Cross Bay Blvd. and 150th St. (2.9 miles) Highway projects: PIN 009.00, PIN 0072.00, PIN 0072.08, and PIN 0031.00. (NTIS Order #PB–200 763–D) (ELR Order #66, 17 pages) 7/1.

Route 209, 52, & 55: Ulster County, *New York*. Relocation and construction of an ultimate 4-lane limited access facility from the Sullivan County line to a recently reconstructed section of Route 209 at Hurley (27 miles). Also involves relocation of short sections of Routes 52 and 55 to connect with Route 209. Highway project PIN 8425.00 (NTIS Order #PB–200 443–D) (ELR Order #23, 28 pages) 6/30.

Route 8: Delaware and Otsego Counties, *New York*. Relocation of route beginning at a point near Thorp Hill Road proceeding northerly as a connector interchange on I–85 and continuing on a parallel line with Sidney Village line to intersection with Route 7. Highway project PIN 9067.00. (NTIS Order #PB–200 757–D) (ELR Order #64, 16 pages) 7/1.

Newburgh Riverfront Arterial: Orange County, *New York*. 4(f) review attached as alternatives discussed involve various historic sites and parkland, i.e. Headquarter's Washington Park and the residency of James Clinton House. Highway project PIN 8117.00 (NTIS Order #PB–200 770–D) (ELR Order #65, 40 pages) 7/1.

New York Routes 3 & 86: Franklin and Essex Counties, *New York*. Reconstruction of about 0.5 mile of highway in Adirondack Park. 4(f) documentation to be received later from DOT as highway is within this Park. Highway project PIN 1332.00. (NTIS Order #PB–200 802–D) (ELR Order #127, 65 pages) 7/2.

Route 304 (Coyles Corners-Short Clove): Rockland County, *New York*. Reconstruction of route, adding 2 lanes for northbound traffic, between Old Turnpike Road and Bardonia Road (.7 miles). Highway project 3155.00. (NITS Order #PB–200 805–D) (ELR Order #85, 14 pages) 7/6.

IR–88 (Susquehanna Expressway): Otsego and Schoharie Counties, *New York*. Relocation of highway from a point just east of Oneonta to the Schoharie-Schenectady County Line (12.3 miles). Highway project PIN 9337.08–9337.17. (NTIS Order #PB–200 781–D) (ELR Order #138, 30 pages) 7/6.

Route 94: Orange County, *New York*. Upgrading of route between Chester and Florida (4.3 miles). Highway project PIN 8041.00. (NTIS Order #PB–200 E48–D) (ELR Order #84, 13 pages) 7/6.

Lindley-Caton County Road 120: Steuben County, *New York*. Involves replacement of bridge across Church Creek and upgrading approaches. Highway project PIN 6243.02. (ELR Order No. 162, 15 pages) (NTIS Order No. PB–200 788–D) 7/13.

Interstate Route 88 (Susquehanna Expressway): Albany and Schenectady Counties, *New York*. Construction of 4-lane divided express highway from Schoharie-Schenectady line eastwardly to I–890. (18 miles). Highway to be built in 3 sections. 4(f) documentation attached as project requires land from Darby Hill Wildlife Preserve, the Knights of St. John Golf Course, and the Whispering Pines Golf Club. (NTIS Order No. PB–200 942–D) (ELR Order No. 189, 55 pages) 7/13.

SH–1410 (Main Street) & SH–1496: Essex County, *New York*. Replacement of bridge over Hoisington Brook and improvement of approaches. 4(f) determination attached as project requires 0.7 acre of Lee Park. Highway project PIN 1164.00. (NTIS Order No. PB–200 943–D) (ELR Order No. 188, 61 pages) 7/18.

US–70 Bypass: Craven County, *North Carolina*. Construction of 4-lane divided highway between Clarks and James City, bypassing New Bern (approximately 9 miles). Will pass through the Trent River Marsh. Highway project 6.801751. (NTIS Order No. PB–200 362–D) (ELR Order No. 3, 33 pages) 6/28.

US–29: Upgrading highway from 2- to 4-lanes beginning at intersection with Secondary Road 1767 north of Ruffin, *North Carolina* and ending at the Virginia State line (7.4 miles). Highway project 6.801735. (NTIS Order No. PB–200 753–D) (ELR Order No. 121, 13 pages) 7/8.

North Carolina 24: Onslow County, *North Carolina*. Construction of 7 miles of improved highway from Camp Lejeune at Thubert to Swansboro. Roadway will be widened from 2- to 4-lanes. Highway project 6.801743, part II. (NTIS Order No. PB–200 782–D) (ELR Order No. 139, 17 pages) 7/9.

I–40: Wake-Johnson Counties, *North Carolina*. Construction of 37.3 miles of highway from 2.5 miles west of Raleigh to near Smithfield. Road will provide "missing link" between I–85 (Durham) and I–95 (Smithfield). 68 families and 12 businesses will be relocated. Highway project 8.1475201, Federal Aid Project I–40–4(5) (268). (NTIS Order No. PB–201 229–D) (ELR Order No. 216, 26 pages) 7/22.

Raleigh Beltline: Wake County, *North Carolina*. Construction of a 4-lane divided freeway from US–64 east of Raleigh, *North Carolina* to proposed I–40 southeast of Raleigh (3.2 miles). 4(f) documentation attached since project requires use of land from Worthdale Park. Highway project 6.801782. (ELR Order # 246, 28 pages) (NTIS Order # PB—201 335–D) 7/23.

US–64, (Rocky Mount Bypass): Nash-Edgecombe Counties, *North Carolina*. Construction of a 4-lane divided freeway from west of Rocky Mount to east of Rocky Mount.

Highway project 6.801773. (ELR Order # 253, 22 pages) (NTIS Order # PB–201 303–D) 7/26.

North Carolina–24: Cumberland County, *North Carolina*. Construction of a 5-lane highway and bridge from US–301 across the Cape Fear River to the NC–24—NC–53—NC–210 intersection. 4(f) determination attached as highway requires 1.1 acres of Pope Park. Highway project 9.8062023. (ELR Order # 277, 34 pages) (NTIS Order # PB–201 332–D)

North Carolina–107: Jackson County, *North Carolina*. Relocation and widening of route beginning just north of SR–1728, continuing along the Tuckaseigee River, passing the western boundary of Western Carolina Univ. in Cullowhee, to a point near East Laport (5.9 miles). State Highway project 6.801869. (ELR Order # 292, 18 pages) (NTIS Order # PB–201 398–D) 7/29.

State Route 229: Gambier, *Ohio*. Relocation of 1.3 miles of highway from intersection of present SR–229 and Gambier's northwest corporation line on general alignment of County Road # 7. Highway project S–1194(3). (NTIS Order # PB–200 528–D) (ELR Order # 36, 6 pages) 7/2.

US–30: Van Wert, Putnam, & Allen Counties, *Ohio*. Project consists of connecting relocated US–30, east of Van Wert, to relocated US–30N, east of Delphos (2.1 miles). Also to be constructed is a connection on new location between US–30S & US–30N. Highway project VAN/PUT/ALL–30–16.28/0.00/0.00 (unprogrammed) (NTIS Order # PB–200 751–D) (ELR Order # 119, 12 pages) 7/8.

State Route 39: Holmes County, *Ohio*. Emergency construction of new bridge over Lake Fork on new location just north of present structure. Bridge will be 2 lanes wide and .4 mile long. Highway project HOL–39–2.05. (NTIS Order # PB–201 097–D) (ELR Order # 197, 7 pages) 7/19.

Fairpark Blvd: Stephens County, *Oklahoma*. Construction of highway on new alignment from a point east of 13th Street, .6 mile to just east of East Road. FAS project SU–6919 (100) c. (NTIS Order # PB–200 785–D) (ELR Order # 142, 29 pages) 7/6.

US—60: Garfield & Major Counties, *Oklahoma*. Three-phased construction project, involving widening, resurfacing, and reconstruction beginning approximately .3 mile west of Lahoma to a point 2 miles south of Cleo Springs (20.2 miles). Highway project F–180. (NTIS Order # PB–200 759–D) (ELR Order # 70, 9 pages) 7/7.

Shaniko-Fossil Secondary Highway (Clarno-Porcupine Butte Section): Wheeler County, *Oregon*. Reconstruction of 2 miles of unpaved crooked mountain road and construction of a bridge on new location at Clarno on the John Day River. Highway project S–295(–). (NTIS Order # PB–201 096–D) (ELR Order # 198, 13 pages) 7/19.

FAS 23–015 (Succor Creek Highway): Malheur County, *Oregon*. Proposed project is to replace a bridge over the Snake River. Associated work such as approach construction, grading and paving will also be accomplished. (NTIS Order # PB–201 247–D) (ELR Order # 226, 12 pages) 7/21.

I–80N Interchange: Union County, *Oregon*. Upgrading of Island City section of the Wallowa Highway from 2-to-4 lanes including parking lands and a wide median strip. (NTIS Order # PB–201 227–D) (ELR Order # 217, 12 pages) 7/21.

Legislative Route 1094, Section 2 (Warren Bypass): Warren County, *Pennsylvania*. Construction of a limited access expressway beginning at the end of L.R. 88 (Section 14) in Starbrick to US–6 and T.R. 59 in Rogertown (2.1 miles). 4(f) documentation since project requires land used for recreational facilities. (NTIS Order # PB–200 438–D) (ELR Order # 24, 34 pages) 6/30.

Legislative Route 1070 (US–20 Relocated): Adams County, *Pennsylvania*. Construction of a 4-lane bypass around Gettysburg beginning 1 mile north of McKnightstown and ending near Granite Hill (10.1 miles). (NTIS Order #PB–200 747–D) (ELR Order #82, 11 pages) 7/7.

I–78 (L.R. 1045, Section HOO): Lehigh County, *Pennsylvania*. Describes 2 alternative corridors (North and South) between Haafsville and Lehigh-Northampton County line in Colesville. (North corridor—14.5 miles; South corridor—17.6 miles). Outlines the environmental impact of each alternative. (NTIS Order #PB–200 754–D) (ELR Order #86, 50 pages) 7/7.

L.R. 44, Section 9 (Waynesboro Bypass): Franklin County, *Pennsylvania*. Relocation of L.R. 224 (West Main Street) and L.R. 44 (East Main Street) beginning just west of the Waynesboro Borough Line and terminating at Traffic Route 16 in Rouzerville (4.7 miles). (NTIS Order #PB–200 946–D) (ELR Order #159, 13 pages) 7/13.

L.R. 20104 (STR–89): Crawford County, *Pennsylvania*. Relocation of route north of Titusville (2 miles). Present route will be inundated by the Church Dam project. (NTIS Order #PB–200 948–D) (ELR Order #157, 6 pages) 7/13.

L.R. 22004 (Section 2): Dauphin County, *Pennsylvania*. Reconstruction of segment beginning at the Dauphin Borough Middle Paxton Township line extending northerly for 1.3 miles. (NTIS Order #PB–200 947–D) (ELR Order #158, 9 pages) 7/13.

L.R. 1061 (sections 4 & 5) and L.R. 1101 (sections 3, 4, & 5): Blair County, *Pennsylvania*. L.R. 1101 construction begins on new location in Carson Valley and ends near Blairmont Country Club Golf Course (4.9 miles). L.R. 1061 construction begins on new location south of Duncansville Borough continues through Altoona to point near Route 884 (4.4 miles). Will provide a limited access highway. (NTIS Order #PB–201 245–D) (ELR Order #235, 39 pages) 7/22.

L.R. 21051, Section 10 (Valley Road): Cumberland County, *Pennsylvania*. Relocation of .8 mile of road in East Pennsboro and Hamden to eliminate substandard horizontal and vertical curves. (NTIS Order # PB–201 248–D) (ELR Order # 227, 8 pages) 7/22.

L.R. 1023, Section 1 (Beaver Valley Expressway): Allegheny County, *Pennsylvania*. Would extend from L.R. 1057 (Airport Parkway) to a connection with Beaver Valley Expressway now under construction, near McCutcheon Road. The project would consist of 6 lanes, running for about 3.7 miles. (ELR Order # 282, 10 pages) (NTIS Order # PB–201 304–D) 7/27.

Humacao South Bypass: Humacao, *Puerto Rico*. Construction of bypass involves 4 concrete overpasses and 1 bridge over Mariana Creek. Length of project is 1.9 miles. Highway project F–30–1(10). (NTSI Order # PB–200 780D) (ELR Order # 137, 5 pages). 7/7.

Meeting Street Expressway: Richland-Lexington Counties, *South Carolina*. Construction of multi-lane facility between Columbia and West Columbia, primarily on new location. (NTIS Order # PB–200 526–D) (ELR Order # 34, 10 pages) 7/2.

US–15: Lee County, *South Carolina*. Widening to 4 lanes 1.2 miles of existing highway between S.C.–154 and I–20. Highway project F–061–2( ). (NTIS Order # PB–201 094–D) (ELR Order # 199, 6 pages) 7/14.

Citadel Parkway: Charleston County, *South Carolina*. Construction of multi-lane highway facility extending from proposed Lockwood Boulevard Extension on the Charleston peninsula westerly across the Ashley River to the proopsed Inner Belt Freeway. Includes new crossing of Ashley River (3.7 or 5.6 miles depending on alignment of Inner Belt). (NTIS Order # PB–201 240–D) (ELR Order # 230, 11 pages) 7/22.

SH–24: Wise County, *Texas*. Relocation and widening highway from 2 miles west of Decatur, bypassing downtown Decatur, to point on existing highway 1.5 miles east of Decatur (7 miles). Will require 130 acres for highway right-of-way. Highway project S 623. (NTIS Order # PB–200 756–D) (ELR Order # 63, 11 pages). 7/6.

SH–146: Galveston County, *Texas*. Construction of 6-lane limited access facility from .5 mile north of Dickinson Bayou to F.M. 1764 in Texas City (4.9 miles). Involves building new bridge over Dickinson Bayou. Highway project F 1081. (NTIS Order # PB–200 758–D) (ELR Order # 62, 14 pages) 7/6.

Loop 485: Gregg County, *Texas*. Initial construction of a 2-lane (ultimate 4-lane) facility from US–271 and Pine Stret in Gladwater, continuing east and north to US–80 (2.1 miles). Highway project S 3234. (NTIS Order # PB–201 239–D) (ELR Order # 213, 21 pages) 7/20.

I–80: Summit County, *Utah*. Construction of 4-lane divided highway (eastbound lane will generally follow US–30) from point east of Emory Overhead to 1 mile east of Castel Rock (6.5 miles). Will go through Echo Canyon. Highway project I–80–4(11)175. (NTIS Order # PB–200 439–D) (ELR Order # 19, 38 pages) 6/30.

US 50 & US–6: Carbon County, *Utah*. Widening and realigning highway from point 2.5 miles south of Helper to point about 1.5 miles southeast of Price (from Blue Cut to Cat Canyon). Purpose: provide bypass around Price and Wellington. Highway project F–028–2(12). (NTIS Order # PB–200 755–D) (NTIS Order # 78, 26 pages) 7/7.

Vermont Route 102: Lemington, *Vermont*. Statement describes 2 interrelated projects. The first runs from Bloomfield-Lemington Town Line north for 2 miles. The second runs from just south of the Lemington-Canaan Town Line northerly for 1.8 miles. Involves replacing gravel roads with paved roads. Highway projects, respectively, S 0275 (5) & S 0271 ( ). (NTIS Order # PB–200 525–D) (ELR Order # 33, 9 pages) 6/25.

Vermont Route 100: Washington County, *Vermont*. Project consists of widening and realigning route from "Piggery Bridge" northerly to US–2 (about .8 miles). Highway project S 0213(3). (NTIS Order # PB–201 231–D) (ELR Order # 210, 18 pages) 7/8.

I–182: Construction of highway from a connection with I–82 near Prosser, *Washington* to Pasco, *Washington* (34 miles). Will cross portion of the Yakima River located in the McNary Game Range. (NTIS Order #PB–200 360–D) (ELR Order #6, 13 pages) 6/29.

SR–2: Construction of 4-lane divided highway with interchange on new location about a mile northwest of Peshastin, *Washington* (2.7 miles). Highway project F–024–2 ( ). (NTIS Order # PB–200 371–D) (ELR Order # 4, 6 pages) 6/29.

SR–12: Columbia County, *Washington*. Upgrading and widening route to an ultimate 4-lane facility between Dayton and Delaney. Highway project F–018–5. (NTIS Order # PB–200 933–D) (ELR Order #181, 10 pages) 7/13.

SR–12: Widening route, partially on new location, from Waitsburg to Dayton, *Washington* (11 miles). 4(f) report attached since project involves the Lewis and Clark Trail State Park. Highway project F–019–5. (NTIS Order # PB–200 929–D) (ELR Order # 179, 29 pages) 7/13.

SR–97: Relocation and upgrading road to create bypass around Chelan, *Washington* and replacement of bridge with 2 bridges over Chelan River (3.6 miles). Highway project F–029–1. (NTIS Order #PB–201 232–D) (ELR Order # 212, 12 pages) 7/20.

STH–13 (Ogema Bypass and Prentice Bypass): Price County, *Wisconsin*. Two separate statements have been prepared on these projects. Since in close proximity, however, FHWA in Wisconsin recommends they be reviewed together. Ogema Bypass involves relocation of highway with STH–864 extending north-northwest for 2.2 miles. Prentice Bypass involves realigning highway about a mile south and west of Prentice and extending

northerly for approximately 3 miles. Highway project F 04–5 ( ). (NTIS Order # PB–200 437–D) (ELR Order # 20, 7 pages [Ogema], 8 pages [Prentice]) 6/30.

Ryan Road (STH–100): Milwaukee County, *Wisconsin*. 2.8 miles of widening and upgrading of road on partial new location in Oak Creek. Highway project P 059–1(6) ID 2040–4–00. (NTIS Order # PB–200 746–D) (ELR Order # 83, 12 pages) 7/6.

US–41: Brown County, *Wisconsin*. Relocation and upgrading to freeway standards beginning in West De Pere and extending northerly through Ashwaubenon to junction with Lombardi Ave. in Green Bay. Highway project F 03–2( ); ID 1151–3–00. (NTIS Order # PB–200 771–D) (ELR Order # 126, 12 pages), 7/9.

USH–41: Winnebago County, *Wisconsin*. Construction of 7 miles of highway between Oshkosh and Neenah. Highway project F 03–2( ) ID 1120–4–00. (NTIS Order No. PB–200 940–D) (ELR Order No. 187, 13 pages) 7/15.

USH–18 & USH–151: Iowa and Dane Counties, *Wisconsin*. Relocating and upgrading of 21 miles of highway between Dodgeville and Mount Horeb. Highway between Dodgeville and Mount Horeb to be upgraded to freeway standards and through Dodgeville, upgraded to expressway standards. Highway project F 012–1( ), F 017–1( ), & F 017–2( ); ID 1203–0–00 & ID–1666–1–00. (NTIS Order No. PB–200 938–D) (ELR Order No. 184, 18 pages) 7/15.

Gratiot-Argyle Road (STH–78): Lafayette County, *Wisconsin*. Construction of a highway, generally following existing roadway except for two sections on new location. Purpose: to improve vision, drainage, and safety. Some pasture and cropland will be taken out of productivity. Highway project S 0252 (6). (NTIS Order No. PB–201 250–D) (ELR Order No. 229, 10 pages) 7/22.

Mills Spur Road: Natrona County, *Wyoming*. Project involves upgrading of 2.2 miles of highway connecting Primary Highways Wyoming 220 & US–20 & 26. 4(f) documentation attached as route requires land from Fort Casper Park. Highway project U–021–2(30). (ELR Order No. 242, 60 pages) (NTIS Order No. PB–201 300–D) 7/23.

Final

Title, description, and date

Ala. 229, Elmore County, *Alabama*. Construction of 1.4 miles of 2-lane road. Purpose: to eliminate 3 unsafe horizontal curves and sub-standard bridge. Project S–2607(101). Comments made by DOD, EPA, DOT, DOI, USDA, Alabama Dev. Office. (NTIS Order No. PB–200 612–F) (ELR Order No. 106, 21 pages) 7/7.

Alabama S.R. 50, Lafayette, Alabama. Construction of 2.13 miles of highway from 500 ft. west of US–431 south of Lafayette to Alabama Highway 50, .06 mile east of eastern city limits. Project S–262–B. Comments made by HUD, EPA, DOI, DOT, COMMERCE, DOD, USDA (ELR Order No. 240, 24 pages) (NTIS Order No. PB–201 312–F) 7/21.

US–280 upgrading and realigning road between Opelika and Phenix, *Alabama*. Length of project is about 2 miles. Federal Project No. 422. Comments made by DOI, USDA, DOD, COMMERCE, HUD, several State of Alabama agencies. (NTIS Order No. PB–200 597–F) (ELR Order No. 166, 30 pages) 7/13.

US–231 Elmore County, *Alabama*. Construction of a 4-lane facility between Wetumpka and Riddle. Includes new bridge over Sofkahatchee Creek. Highway project S–475–F. Comments made by AEC, USDA, EPA, FPC, HUD, COE, COMMERCE, various State of Alabama agencies. (ELR Order No. 271, 33 pages) (NTIS Order No. PB–201 327–F) 7/23.

US 43: Clarke County, *Alabama*. Improving this highway to 4 lanes from Grove Hill to Thomasville (about 13 miles). Project F–231, S–1080–F, Comments made by HUD, DOI, USDA, FAA, DOD, COMMERCE (ELR Order No. 267, 22 pages) (PB–201 321–F) 7/26.

S.R. 49, Tallapoosa County, *Alabama*. Construction of a rural type 2-lane facility (1.7 miles). Involves relocation of section over the Central of Georgia Railroad. S–6203( ). Comments made by DOI, DOT, COE, USDA, HUD, COMMERCE, State of Alabama Development Office. (ELR Order No. 272, 26 pages) (NTIS Order No. PB–201 326–F) 7/26.

Tucson, Oracle Junction, Globe Highway, Oracle West Section: *Arizona*. Construction of 7.81 miles of highway on new location. Will bypass business area of Oracle. Comments made by DOI, Arizona Game & Fish Dept. Highway Project F–031–1(9). (NTIS Order No. PB–198 843–F) (ELR Order No 98, 13 pages) 7/7.

I–8 (Yuma-Casa Grande Highway) Yuma, *Arizona*. Surfacing of 1.5 mile segment of interstate highway, from 4th St. to 16th St. (Railroad underpass). Federal project I–IG–8–1(62). Comments made by DOI, and City Administrator of Yuma. (NTIS Order No. PB–200 611–F) (ELR Order No. 105, 13 pages) 7/7.

Santa Cruz Wash—Junction I–10 section of the junction I–10—Casa Grande—Picacho Highway Pinal County, *Arizona*. Construction of 5.7 miles of 4-lane highway, with fenced right of way, etc. Construction will be along existing highway or right of way. Project F–014–1(5). Comments made by DOI, Arizona Game & Fish Dept, State Clearinghouse. (ELR Order #241, 16 pages) (NTIS Order # PB–201 314–F) 7/21.

I–10 (Ehrenberg-Phoenix Highway), Maricopa County, *Arizona*. Statement covers 3 sections: Tonopah-Buckeye, Buckeye-Cemetery, Cemetery-Perryville. Construction of grade and drain for new 4-lane highway across 21.9 miles of scenic desert. Plan to relocate major specimen ocotillo and saguaro cacti presently in path of construction. Federal projects I–10–2(16), I–10–2(28), I–10–1(31). Comments made by USDA and various State of Arizona agencies. (ELR Order #265, 17 pages) (NTIS Order # PB–201 320–F) 7/26.

Springerville-Clifton Highway (Sycamore Gulch-Silver Creek section). Also known as Duncan-Alpine Highway (US–666) "Coronada Trail". Present US–666 is being displaced by expansion of the Morence open pit mine. Involves construction of 1.93 miles of 34 ft. wide roadway, *Arizona*. Federal Project F–051–2(2). Comments made by USDA, DOI, several State of Arizona agencies. (ELR Order #268, 17 pages) (NTIS Order # PB–201 317–F) 7/26.

Holbrook Interstate Freeway, Unit I, Navajo County, *Arizona*. First of 2 projects which will replace US 66 through Holbrook, from Leroux, Wash. 2 miles west of Holbrook to just west of 8th St. on the north side of town. Project I–40–4(30). Comments made by DOI, and the Town Manager of Holbrook. (ELR Order #275, 8 pages) (NTIS Order # PB–201 319–F) 7/26.

I–15, Mohave County, *Arizona*. From Littlefield to the Utah State line. Four projects are involved: Littlefield traffic interchange, I–15–1(21); Cedar Pocket T.I. Rest area, I–15–1(30); Littlefield to Cedar Pocket surfacing, I–15–1(27); and Cedar Pocket to Utah surfacing, I–15–1(29). Comments made by USDI and various State of Arizona agencies. (ELR Order #258, 16 pages) (NTIS Order # PB–201 316–F) 7/26.

U.S. 17, SR 15, 20 and 100: St. Johns River Bridge at Palatka, Putnam County, *Florida*. A high level 4-lane structure is planned. Some realignment of the river channel will be needed. Comments made by DOD, HUD, DOI, DOT, USDA, COMMERCE, various State of Florida agencies and local organizations. (ELR Order No. 276, 58 pages) (NTIS Order No. PB–201 328–F) 7/26.

I–2, West side of Pearl City, Oahu, *Hawaii*. Construction of 4.4 miles of highway from Waihole Ditch to Waikakalaua Gulch. Will be parallel and Supplementary to existing Kamehameha highway. Comments made by DOI, HEW, USDA, various State of Hawaii agencies. (NTIS Order No. PB–200 618–F) (ELR Order No. 112, 68 pages) 7/7.

I–16–1, Truelton, Emanuel, Candler and Bulloch Counties, *Georgia*. Completion of construction of 164.96 miles of highway between Macon and Savannah. Much of this highway is already completed. Comments made by USDA, DOA, DOT, DOI, HUD, EPA, various State of Georgia agencies. Project I–16–1(13)77. (NTIS Order No. PB–200546–F) (ELR Order No. 47, 34 pages) 7/1.

Athens East Bypass: 4-lane, 2 mile long highway beginning ¼ mile east of US 441 and west Whitehall road, to a terminus with US 441 south of the Clark-Oconee County line, *Georgia*. Project FFG–055–1(6) Comments made by HUD, DOI, BR, EPA and various State of Georgia agencies. (NTIS Order No. PB–200 617–F) (ELR Order No. 111, 37 pages) 7/2.

US–27 (S.R.1), Chattooga County, *Georgia*. Construction of 4.5 miles bypass from US–27 at end of S.R. 48 to point ½ mile north of Trion, Georgia. Purpose: provide alternative to congested travel through Summerville and Trion. Project F–017–3(17). Comments made by USDA, HUD, EPA, COE, various State of Georgia agencies. (NTIS Order No. PB–201 088–F) (ELR Order No. 151, 27 pages) 7/13.

S.R. 166 and 61: Carroll County, *Georgia*. The "Carrollton Bypass". Construction of about 6 miles of highway to relieve congestion on city streets. Comments made by EPA, USDA, HUD, DOI, COE, various State of Georgia agencies. (NTIS Order # PB–201 308–F) (ELR Order # 270, 25 pages) 7/26.

S.R. 316: construction of 6.26 miles of 4-lane highway from 1 mile west of Lawrenceville to 1 mile west of Dacula, *Georgia*. Purpose: more direct route between Atlanta and Athens. Will aid industrial development. Project F–108–1(4). Comments made by COE. USDA, EPA, DOI, HUD, and various State of Georgia agencies. (ELR Order # 264, 28 pages) (NTIS Order # PB–201 315–F) 7/26.

K–10: Douglas and Johnson Counties, *Kansas*. Upgrading of 12 miles of highway to 4-lane freeway, to relieve present congestion. Projects 10–23 F–078–6(18), 10–46 F–078–6(19). Comments made by USDA, COE, DOI, FAA, OEO, concerned citizens and local agencies. (NTIS Order # PB–200 606–F) (ELR Order # 93, 71 pages) 7/2.

K–260: Upgrading of existing FAS 307 and FAS 451 in Moundridge, *Kansas* (identified as the Moundridge Loop). Length of project from intersection of Christian Avenue and Cole Street north to I–35 and east to I–35 are 1.7 miles and 1.5 miles respectively. Projects 260–59 S–112(9) and 260–59 S–233(15). Comments made by USDA, COE, DOI, HUD and several State of Kansas agencies. (NTIS Order # PB–200 609–F) (ELR Order # 97, 22 pages) 7/7.

K–61: construction of 0.9 miles of highway in Reno County, *Kansas*. Purpose: to complete the last segment of relocation and upgrading of K–61 through Hutchinson. Project U–030–1(13). Comments made by HEW, DOI, USDA, COE and various State of Kansas agencies. (NTIS Order # PB–200 959–F) (ELR Order # 171, 27 pages) 7/14.

US 24: Kansas City, *Kansas*. Widening of 0.47 miles to 4-lanes from 385 feet east of the intersection with 43rd St., east to 36th St. Project 24–105 U–072–1(22). Comments made by EPA, DOT, FAA, DOI, HEW, COE, USDA, and various State of Kansas agencies. (NTIS Order # PB–200 955–F) (ELR Order # 172, 22 pages) 7/14.

LA–1: Relocation of route to improve alignment, construction of new Bayou Pierre bridge. Natchitoches Parish, *Louisiana*. Project S–48(4). Comments made by HEW, COMMERCE, USDA, AEC, DOI, various State of Louisiana agencies. (NTIS Order # PB–200 615–F) (ELR Order # 109, 35 pages) 7/7.

Relocation of Route 28 in *Louisiana*. (Vernon Parish) about 10.13 miles of 2-lane road are planned from the junction of La-28 and La-1214, to a junction with La 465. Comments made by DOT, HEW, DOI, DOD, AEC, FPC, various State of Louisiana agencies. (NTIS Order # PB–200 616–F) (ELR Order #110, 29 pages) 7/7.

Route 740: Boone County, *Missouri*. Construction from business Route 63 east to route 63. Roadway will provide better access to Univerity of Missouri. Comments made by HUD, DOI, Mid-Missouri Regional Planning Commission and Mo. Dept of Community Affairs. (NTIS Order # PB–200 602F) (ELR Order # 48, 10 pages) 6/30.

S.R. 14: realignment and upgrading of highway from a point 8 miles south of Tijeras, *New Mexico* to a point 4 miles south. Seventy percent of land adjacent to the project lies within Cibola National Forest. Project S–1500(11). Comments made by, USDA New Mexico Highway Dept. and several other State of New Mexico agencies. (NTIS Order # PB–200 960–F) (ELR Order # 168, 16 pages) 7/13.

First section of new freeway from Hamilton, *Ohio* to I–71, all new location. This section is from I–75 in Butler County to I–71 in the vicinity of Western Row Road. Will require part of a golf course and the relocation of some homes and businesses. Project BUT/WAR–129–15.32/0.00. Comments made by DOT, DOI, EPA, ARMY, State of Ohio Dept. of Natural Resources and City of Masm. (NTIS Order # PB–200 605–F) (ELR Order # 99, 14 pages) 7/7.

State Route 151: Harrison County, *Ohio*. Construction of 2-lanes from junction of S.R. 212 and S.R. 152, to .9 mile east of Scio. Ohio project S–780(8): Comments made by DOI, USDA, COE, Ohio Dept of Natural Resources. (ELR Order # 269, 12 pages) (NTIS Order # PB–201 323–F) 7/26.

Boring Road section, Mt. Hood Highway, *Oregon*. Proposal to build a freeway type interchange and grade separation structure over Mt. Hood Highway. Comments made by DOT, HUD, various State of Oregon agencies, and concerned citizens. (NTIS Order # PB–200 613–F) (ELR Order # 107, 28 pages) 7/2.

S–33 (Trenholm Road): Upgrading of 3.1 miles from 2 to 4 lanes from point near Beltline Boulevard to point near Rockridge Road, Columbia, *South Carolina*. (3.3 miles) Comments made by DOT and the Central Midlands Regional Planning Council. (NTIS Order # PB–200 806–F) (ELR Order # 145, 11 pages) 7/9.

US–18: Tripp and Gregory Counties, *South Dakota*. Rebuilding of highway from Winner, South Dakota to a point 43 miles southeast. Widening, flattening of some curves, etc. Comments made by USDA, DOT, COMMERCE, DOI, HUD, EPA. Project F–010–5 & F010–6. (NTIS Order # PB–200 447–F) (ELR Order # 15, 20 pages) 6/25.

US–85: upgrading from 7.5 miles north of Redig, *South Dakota* to 5.0 miles south of Redig. Involves flattening curves, raising grade, widening roadway, etc. Comments made by HUD, DOI, USDA, DOT, EPA. Project F–011–5 & F–011–6. (NTIS Order # PB–200 448–F) (ELR Order # 14, 12 pages) 6/25.

S.H. 37: Davidson County, *South Dakota*. Four lane Highway project originally scheduled to begin at the Sanborn-Davison County line, is now designed to begin 1 mile south of the Sanborn County line continuing along existing route for 5 miles. Comments made by HUD, DOI, USDA, COMMERCE AND EPA. Project F–047–3. (NTIS Order # PB–200 449–F) (ELR Order # 13, 15 pages), 6/26.

S.H. 50: rebuilding of ½ mile through Wagner, *South Dakota*. Project F–012–1. Comments made by DOI, USDA, HUD, EPA, (NTIS Order # PB–200 446–F) (ELR Order # 16, 12 pages) 6/25.

US–85: Rebuilding (flattening curves, widening, raising grade) from North Dakota line south for about 8 miles to Ludlow, *South Dakota*. Includes new bridge at Crooked Creek. Comments made by EPA, DOT, DOI, HUD, USDA, Project F–011–6. (NTIS Order #PB–200 807–F) (ELR Order #146, 15 pages) 7/9.

Secondary Route 4340: Hamilton County, *Tennessee*. Reconstruction from Hixon Pike to the new Seguoyan Stream plant access road (about 2.3 miles north of New Salem). Federal project S–4340(1). State project 33064–1301–03. Comments made by DOT. (NTIS Order #PB–200 607–F) (ELR Order #95, 7 pages) 7/2.

State Route III, White County, *Tennessee*. Project is a north-south bypass. 3.4 miles in length of Sparta. It will be a 4-lane divided highway. Federal project APD–100–1(1). State Project 93052–1201–04. Comments made by USDA, COE, HUD, DOI. (NTIS Order #PB–200 608–F) (ELR Order #96, 13 pages) 7/7.

S.R. 42: Construction of 2.85 miles of 4-lane highway to replace a sub-standard section. Pickett County, *Tennessee*. Comments made by DOI, USDA, COE, FHWA and State of Tennessee office of Urban and Federal Affairs. (NTIS Order #PB–200 614–F) (ELR Order #108, 21 pages) 7/7.

Secondary Route 2591: Knox County, *Tennessee*. Construction of highway from Neubert Springs Road to State Route 71. Federal Aid Project S–2591(7), State Project 47057–0308–03. No specific comments were received on draft statement. (NTIS Order #PB–200 809–F) (ELR Order #141, 6 pages) 7/9.

Loop 256: from State Highway 155, north of Palestine, west and south to US–79. Anderson County, *Texas*. Construction on new location of an ultimate 4-lane highway. On map provided, project looks to be a little over 1 mile in length. Purpose: bypass of Palestine, Texas S2479. Comments made by DOT, Commerce. (NTIS Order #PB–200 956–F) (ELit Order #165, 22 pages) 7/14.

US 17: Construction of 24 foot pavement parallel to the existing road, making a 4-lane divided facility. Starts about 2 miles east of the Caroline-Spotsylvania County line, *Virginia*, and ends about 1 mile west of this county line. (4.82 miles). Highway project F–012–2. Comments made by DOI, several Commonwealth of Virginia agencies. (NTIS Order # PB–200 951–F) (ELR Order # 155, 8 pages) 7/13.

US 460: Giles County, *Virginia*. Involves construction of segment of a planned partial bypass of Parisburg and the Ripplemead community. Project AC–ADD–02301 (35), F–023–1. Comments made by Commonwealth of Virginia, Commission of Outdoor Recreation and Air Pollution Control Board. (NTIS Order # PB–200 958–F) (ELR Order # 167, 6 pages) 7/13.

Bridge and approaches: Lynchburg, *Virginia*. Rivermont Ave. over Norfolk and Western Railway and Blackwater Creek. Purpose: to replace deteriorating bridge. Comments made by various Commonwealth of Virginia agencies. (ELR Order # 266, 9 pages) (NTIS Order # PB–201 318–F) 7/22.

Route 646: Charlotte County, *Virginia*. From the intersection of routes 360 and 47 to the Charlotte-Mecklenburg County line. Replacement of existing road with one that has better alignment and grades. State project 0646–019–127, C–501, Comments made by Commonwealth of Virginia Air Pollution Control Board and Commission of Outdoor Recreation. (NTIS Order # PB–198 866–F) (ELR Order # 274, 6 pages) (PB–201 325–F) 7/26.

Chippewa River Bridge and approaches: Sawyer County, *Wisconsin*. Replacement of "Ketcha Bridge" and relocating approaches. Comments made by DOI, USDA, DOT, COE, Northwestern Wisconsin Regional Planning & Development Commission. Highway Project S 0691(6) (NTIS Order # PB–200 601–F) (ELR Order # 49, 32 pages) 6/30.

STH–72 (Ellsworth-Elmwood Road). Reconstruction of existing road between Cave Creek and a point near the junction of STH 183 at Waverly, *Wisconsin*. Realignment of a portion of the road near Cave Creek requires 28 acres of tillable land. Highway project FAS 075. Comments made by DOI, USDA, HUD, DOT and Mississippi River Regional Planning Commission (ELR Order No. 273, 15 pages) (PB–201 324–F) 7/26.

C.T.H. "F": Taylor County, *Wisconsin*, Reconstruction from Lubin Northeasterly 3.1 miles to the junction of STH 64. Wisconsin project S 052(17). Comments made by USDA, HUD, DOT, DOI. (ELR Order No. 257, 11 pages) (NTIS Order No. PB–201 322–F) 7/26.

FHWA 4(f) Statements

The following are not 102 statements. They are explanations of the Secretary of Transportation's approval of projects to be implemented under Section 4(f) of the Department of Transportation Act. 49 U.S.C. Section 1653(f).*

Title, description, and date

US–101: Humboldt County, *California*. Highway construction requires land from Benbow Lake and Richardson Grove State Parks. (ELR Order No. 144, 5 pages) 7/8.

Project S–1554(1): Hamilton County, *Kansas*. Project requires use of 4.7 acres of right-of-way and 6 acres for a temporary construction easement from the 432.4 acre Hamilton County State Lake property. (ELR Order No. 161, 3 pages) 7/13.

I–275: Wayne County, *Michigan*. Project requires the use of parklands of the Huron-Clinton Metropolitan Park Authority. (ELR Order No. 284, 6 pages) 7/23.

US–71: Kansas City, *Missouri*. Highway construction requires the use of parklands where the project crosses the undeveloped Blue River Park. (ELR Order No. 164, 3 pages) 7/13.

US–224: Mahoning County, *Ohio*. Highway construction requires .6 acre of land from Boardman Park. (ELR Order No. 7, 3 pages) 6/30.

Construction of I–90 in the city of Cleveland, *Ohio* requires the acquisition of about .5 acre from Buckley Playground. (ELR Order No. 239, 5 pages) 7/22.

Improvement of US–224: Mahoning County, *Ohio*. Involves taking 3.15 acres of Mill Creek Park. (ELR Order No. 285, 4 pages) 7/23.

Carverton Road (FAS Route 1257): Luzerne County, *Pennsylvania*. Requires the use of public lands from Frances Slocum State park. (ELR Order No. 283, 4 pages) 7/22.

State Trunk Highway 100: Oak Creek, *Wisconsin*. Highway project requires 1.15 acres of city park land. (ELR Order No. 160, 6 pages) 7/13.

U.S. Coast Guard

Contact: William R. Riedel, DOT Coordinator, Water Resources, 400 7th Street, SW., Washington, D.C. 20591 (202) 426–2274.

Final

Title, description, and date

Testing of an oil containment barrier developed by the Johns-Manville Products Corp. Testing site is 50 miles west of St. Petersburg, *Florida* at sea. Phase I is to be conducted without oil. Phase II will be conducted in late June with soybean oil. Purpose: to verify prototype design with regard to the combined effects of waves and currents on barrier and oil retention efficiency. Comments made by Florida Departments of Natural Resources and Air and Water Control. (NTIS Order No. PB–198 607–F) (ELR Order No. 29, 13 pages), 6/29.

* These statements cannot be ordered through NTIS.

ENVIRONMENTAL PROTECTION AGENCY

Contact: Mr. George Marienthal, Acting Director of Environmental Impact Statements Office, 1129 20th Street—Room 608, Washington, D.C. (202) 254–6806.

Final

Title, description, and date

Sewerage project, eastern Lake County, *Illinois*. Application for construction grants by the North Shore Sanitary District. Project divided into 2 sectors. Northern sector includes expansion of present North Chicago plant, addition of advanced waste treatment at Waukegan plant, construction of new advanced treatment plant at Gurnec, and treatment for storm overflows. Southern sector of project involves changes from draft statement intentions. Clavey Road facility will be expanded to 18 mgd with advanced waste treatment before discharge to Skokie River. The storm water retention basin will be covered to protect the local residents from objectionable odors and potential airborne infections. Additionally five small lakeside plants will be phased out, and a site for another plant on the Des Plaines River will be obtained. Comments made by members of Congress, Departments of Agriculture, Commerce, Interior, HEW, Transportation, Army, HUD, EPA, and various Illinois State agencies. (NTIS Order No. PB–198 692–F) (ELR Order No. 221, 378 pages) 7/16.

Sewerage project, Cobb County, *Georgia*. Consists of interceptor sewers, treatment facilities and outfall sewers, pumping stations and force mains serving 7 drainage basins. Construction of interceptors will be along creek beds. In particular, construction of the Scope Creek Interceptor through the Chattahoochee River palisades will occur in an area of recreational and scenic value proposed as a future natural recreation area. Comments made by Departments of Agriculture, HUD, Interior, Corps of Engineers, OEO, Advisory Council on Historic Preservation, and environmental groups. (NTIS Order No. PB–198 858–F) (ELR Order No. 259, 191 pages) 7/28.

FEDERAL POWER COMMISSION

Contact: Frederick H. Warren, Advisor on Environmental Quality, 441 G Street, N.W., Washington, D.C. 20426 (202) 386–6084.

Applicant's Drafts.—(These are not official FPC drafts. They will be followed by staff-prepared draft statements. The FPC requests that any person desiring to be heard, to present evidence, to be advised of all hearings and proceedings, with reference to these statements, and to receive notice of proposed subsequent draft statements, file with the FPC on or before 60 days from the publication of this document in the Federal Register.)

Great Lakes Gas Transmission Company's application seeking authority to transport natural gas for Northern Natural Gas Company (Northern.) Proposes construction of a 36-inch diameter parallel loop line for 168.7 miles between a point near Emerson, Manitoba (Canada) and a point near Carlton, *Minnesota*, and adding 12,500 horsepower of compression to an existing compressor station. (NTIS Order #PB–200 791–D) (ELR Order #73, 15 pages) 7/6.

Draft

Title, description, and date

Application for new major license for continued operation by Pacific Gas & Electric Co. of the Bucks Creek Project No. 619. Project is located on Bucks, Grizzly and Milk Ranch Creeks and on North Fork Feather River, in Plumas County and Plumas National Forest, *California*. Project has been in operation for 40 years and is comprised of 4 dams forming 3 lakes, a powerhouse having a capacity of 55,000 kW, switchyard, recreation facilities, etc. (NTIS Order #PB–200 779–D) (ELR Order #136, 52 pages) 7/13.

GENERAL SERVICES ADMINISTRATION

Contact: Rod Kreger, Deputy Administrator, General Services Administration-AD, Washington, D.C. 20405 (202) 343–6077.

Alternate Contact: Aaron Woloshin, Director, Office of Environmental Affairs, General Services Administration-AD (202) 343–4161.

Draft

Title, description, and date

Disposal of 141 acres of Fort Snelling Hospital Reservation, St. Paul, *Minnesota*. Involves assigning this land to the Bureau of Outdoor Recreation for transfer to the State of Minnesota. Purpose: provide park and recreation. Fort Snelling is an historic landmark. (NTIS Order # PB–200 786–D) (ELR Order # 135, 9 pages) 6/30.

Disposal of 1,037 acres of Blythe Island Military Reservation, Glynn County, *Georgia*. 61 acres will be transferred to the FHWA for I–95 right-of-way. 976 acres expected to be allotted to State agencies for use either as a wildlife area or for expansion and development of the Brunswick port. (NTIS Order # PB–201 244–D) (ELR Order # 236, 8 pages) 7/22.

Disposal of the Caven Point Army Reserve Center, Jersey City, *New Jersey*. Proposes to sell center to a consortium made up of the State of New Jersey, the City of Jersey City and the Port of New York Authority. Property to be disposed includes 217.18 acres of fee land, 63 acres of which are under water, 18 obsolete buildings, fuel tanks, a pier and miscellaneous utilities and structures. Planned use: containerized marine terminal and marine related industry. (NTIS Order # PB–201 255–D) (ELR Order # 215, 10 pages) 7/22.

Disposal of a portion of AEC's Argonne National Laboratory, Argonne, *Illinois*. Plans to convey 2,040 acres and several buildings either to the State of Illinois or to DuPage County for park and recreation uses. (ELR Order #298, 10 pages) (NTIS Order #PB–201 387–D) 7/29.

Final

Title, description, and date

Disposal of 288.75 acres of the Missouri Valley National Guard Facility, Harrison County, *Iowa*. Would go to HEW for transfer to Iowa Western Community College. Comments made by HEW, EPA, Harrison County, the County Engineer and Office of the Governor. (NTIS Order #PB–198 865–F) (ELR Order #59, 10 pages) 6/30.

Arkabutla Reservoir, Coldwater, *Mississippi*. Plan for sale of five non-contiguous parcels totaling 25.25 acres to the public for commercial uses. Comments made by DOI, HUD, HEW, Army Corps of Engineers, State of Mississippi clearinghouse and various State of Mississippi agencies. (NTIS Order #PB–201 258–F) (ELR Order #220, 6 pages) 7/21.

INTERNATIONAL BOUNDARY AND WATER COMMISSION—UNITED STATES AND MEXICO

Contact: Joseph F. Friedkin, Commissioner (915) 532–5476.

Alternate Contact: T. R. Martin, ARA/Mex., Department of State, Room 3906 A, Washington, D.C. 20520 (202) 632–1317.

Draft

Title, description, and date

Retamal International Diversion Dam and US dike, Lower Rio Grande flood control project. A joint construction project with Mexico of a gated diversion dam on Rio Grande in Hidalgo County, *Texas* and Tamaulipas, Mexico and a 3-mile dike in this country to connect dam with present levee system. Purpose: enable Mexico to divert one-half the excess floodwaters. (NTIS Order #PB–200 777–D) (ELR Order #133, 6 pages) 6/9.

Modified Hackney floodway and closure of Mission floodway, Lower Rio Grande flood control project, *United States* and *Mexico*. Construction by the US of extension and enlargement of existing Hackney floodway from Anzalduas Dam on Rio Grande to Main floodway, Hidalgo County, *Texas* and closure of existing Mission floodway. Purpose: improve floodway system to reduce damages from flooding. (NTIS Order #PB–201 090–D) (ELR Order #193, 10 pages) 6/18.

Final

Title, description, and date

Hidalgo-Reynosa International Channel Project, *Texas*. Proposed relocation of 1.6 miles of Rio Grande channel through land now in Mexico. Will transfer sovereignty of 481.68 acres to the U.S. as partial accomplishment of the objectives of the treaty signed November 23, 1970. Comments made by EPA, HEW, USDA, DOI, USDI, various State of Texas agencies and local organizations. (NTIS Order #PB–201 087–F) (ELR Order #194, 26 pages) 6/3.

TENNESSEE VALLEY AUTHORITY

Contact: Dr. Francis Gartrell, Director of Environmental Research and Development, (615) 755–2002.

Draft

Title, description, and date

Gas Turbine Peaking Plant Addition, Colbert Steam Plant, Florence, *Alabama*. Involves construction of an 8-unit gas turbine plant with a capacity of 475,600 kW. Units designed to use natural gas or distillate fuel oil. Project scheduled to be completed by May 1972. (NTIS Order No. PB–200 365–D) (ELR Order No. 9, 11 pages) 6/29.

The Duck River Project, Upper Duck River area, *Tennessee*. Involves construction of 2 dams, one near Normandy and the other near Columbia. Approximately 12,600 acres of wild life habitat at Columbia and 3,200 acres at Normandy will be inundated. Purpose: flood control to enable land development and increase employment opportunities. (NTIS Order No. PB–200 442–B) (ELR Order No. 27, 23 pages) 6/30.

Browns Ferry Nuclear Plant, Units 1, 2, and 3, Limestone County, *Alabama*. Involves constructing and operating plant consisting of a reactor containment building, turbine building, radwaste building, sewage treatment plant, etc. Will have total capacity of 3,456 megawatts. Plant on 840 acre site. (NTIS Order No. PB–200 944–D) (ELR Order No. 182, 187 pages) 7/15.

REGIONAL FEDERAL HIGHWAY ADMINISTRATORS

Region 1 (Conn., N.H., R.I., Mass., Puerto Rico, Me., N.J., Vt., N.Y.)

Administrator: Gerald D. Love, 4 Normanskill Blvd., Delmar, N.Y. 12054 Tel: (518) 472–6476.

Region 2 (Del., Ohio, Md., W.Va., D.C., Penna. Va.)

Administrator: August Schofer, Rm. 1633, George H. Fallon Federal Office Bldg., 31 Hopkins Plaza, Baltimore, Md. 21201 Tel: (301) 962–2361.

Region 3 (Alabama, S.C., Georgia, N.C., Fla., Tenn., Miss.)

Administrator: Harry E. Stark, Suite 200, 1720 Peachtree Rd., N.W., Atlanta, Georgia 30309 Tel: (404) 526–5078.

Region 4 (Ill., Ky., Wisc., Indiana, Mich.)

Administrator: Fred B. Farrell, 18209 Dixie Hwy., Homewood, Ill. 60430 Tel: (312) 799–6300.

Region 5 (Iowa, Neb., Minn., Mo., Ka., N.D., S.D.)

Administrator: John B. Kemp, P.O. Box 7186, Country Club Station, Kansas City, Missouri 64113 Tel: (816) 361–7563.

Region 6 (Ark., Oklahoma, La., Texas)

Administrator: James W. White, 819 Taylor St., Ft. Worth, Texas 76102 Tel: (817) 334–3232.

Region 7 (Arizona, Hawaii, Calif., Nevada)
Administrator: Sheridan E. Farin, 450 Golden Gate Ave., Box 36096, San Francisco, Calif. 94102 Tel: (415) 556-3951.

Region 8 (Alaska, Montana, Wash., Idaho, Oregon)
Administrator: Ralph M. Phillips, Rm. 412, Mohawk Bldg., 222 Southwest Morrison St., Portland, Ore. 97204 Tel: (503) 226-3454.

Region 9 (Col., Utah., N.M., Wyoming)
Administrator: William H. Baugh, Bldg. 40, Denver Federal Center, Denver, Colorado 80225 Tel: (303) 233-6721.

SUMMARY OF 102 STATEMENTS FILED WITH THE CEQ THROUGH JULY 31, 1971 (BY AGENCY)

Agency	Draft 102's for action on which no final 102's have yet been received	Final 102's on legislation and actions	Total actions on which final or draft 102 statements for Federal actions have been received
Atomic Energy Commission	28	23	51
Appalachian Regional Commission	1	0	1
Delaware River Basin Commission	3	0	3
Department of Agriculture	34	72	106
Department of Commerce	1	6	7
Department of Defense	3	2	5
Air Force	1	0	1
Army	3	3	6
Army Corps of Engineers	127	208	335
Navy	7	0	7
Department of Health, Education, and Welfare	1	0	1
Department of Housing and Urban Development	9	2	11
Department of the Interior	44	24	68
Department of Transportation [1]	709	169	878
Department of Treasury	2	1	3
Environmental Protection Agency	1	8	9
Federal Power Commission	12	4	16
General Services Administration	20	4	24
International Boundary and Water Commission—United States and Mexico	3	2	5
National Aeronautics and Space Administration	21	0	21
National Science Foundation	2	0	2
New England River Basins Commission	1	0	1
Office of Science and Technology	0	1	1
Tennessee Valley Authority	11	0	11
U.S. Water Resources Council	1	0	1
Total	1,045	529	1,574

[1] Separate 4(f) statements not incorporated in 102 statements received from DOT are not included.

SUMMARY OF 102 STATEMENTS FILED WITH THE CEQ THROUGH JULY 31, 1971 (BY PROJECT TYPE)

	Draft statements for actions on which no final statements have yet been filed	Final statements on legislation and actions	Total actions on which final or draft statements for Federal actions have been received
AEC nuclear development	9	6	15
Aircraft, ships, and vehicles	2	1	3
Airports	17	85	102
Buildings	2	3	5
Bridge permits	18	2	20
Defense systems	2	0	2
Forestry	1	3	4
Housing, urban problems, new communities	9	0	9
International boundary	4	2	6
Land acquisition, disposal	18	7	25
Mass transit	3	0	3
Mining	5	1	6
Military installations	6	1	7
Natural gas and oil:			
Drilling and exploration	5	2	7
Transportation, pipeline	2	2	4
Parks, wildlife refuges, recreation facilities	5	7	12
Pesticides, herbicides	5	9	14
Power:			
Hydroelectric	16	2	18
Nuclear	23	16	39
Other	12	1	13
Transmission	6	4	10
Railroads	2	0	2
Roads	591	75	666
Plus roads through parks	78	5	83
Space programs	7	0	7
Wa te disposal:			
Detoxification of toxic substances	3	1	4
Munition disposal	1	3	4
Radioactive waste disposal	1	1	2
Recycling	0	0	0
Sewage facilities	0	4	4
Solid wastes	1	0	1
Water:			
Beach erosion, hurricane protection	1	20	21
Irrigation	13	7	20
Navigation	31	80	11
Municipal and industrial supply	4	0	41
Permit (Refuse Act, dredge and fill)	3	0	3
Watershed protection and flood control	106	168	274
Weather modification	7	3	10
Research and development	16	1	17
Miscellaneous	10	7	17
Total	1,045	529	1,574

THE MAOIST PLOT AGAINST THE UNITED STATES

HON. JOHN R. RARICK

OF LOUISIANA

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. RARICK. Mr. Speaker, I would like to call the attention of our colleagues to an editorial quoting Chairman Mao that appeared in the April 27, 1971, edition of the People's Daily, a Red Chinese newspaper, that indicates the relationship between the Communist threat which has caused the racial problems that have troubled America over the past decade by exploiting a segment of our society.

I insert this editorial and an essay that uses this editorial to detail the Maoist threat to the United States in the RECORD at this point.

[From Peoples Daily, April 27, 1971]

RENMIN RIBAO—SALUTE TO THE AMERICAN PEOPLE WHO ARE FIGHTING VALIANTLY

A new revolutionary storm is surging up vigorously among the American people against the U.S. imperialists' aggressive war in Indochina. Thousands of ex-servicemen continuously took protest actions in the past few days. On April 24, over a million people held demonstrations and rallies on an unprecedented scale in Washington and San Francisco, pushing the struggle to a new high. Their powerful actions showed that the American people stand on the same front as the three Indochinese peoples and the people of all other countries who are fighting against U.S. imperialism. The Chinese people salute the American people who are fighting valiantly!

The demonstrations and rallies which took place in Washington and San Francisco recently assumed a more distinct mass character than all past protest actions. Answering the joint appeal of hundreds of worker, Afro-American, student and women organizations, people of various strata, regardless of occupation, belief, nationality and age, joined the ranks of demonstrators, carrying placards, inscribed with the slogan "All U.S. troops out of Southeast Asia" and shouting, "We don't want your war," in indignant protest against U.S. imperialism's slaughter of the Indochinese people. U.S. imperialism's armed forces are tools of the U.S. monopoly capitalist class for committing aggression abroad and suppressing the people at home. However, besides veterans back from the Indochina battlefield, about ten thousand active servicemen took part in this struggle. All this shows a new awakening of the American people.

Friedrich Engels once pointed out: "No nation can become free and at the same time continue to oppress other nations." By launching the war of aggression against Indochina, U.S. imperialism has amassed huge profits for a handful of monopoly capitalists and brought endless calamities to the broad masses of the American people. While savagely slaughtering the Indochinese people, the U.S. reactionaries have also intensified their onslaught on the American people. The harsh reality provides food for deep reflection

by the broad masses of the American people: What on earth is the purpose of driving hundreds of thousands of American youth across the ocean to die on the Indochina battlefield? What connection is there between the inflation, soaring prices, heavier taxes and rising unemployment in the United States and the war raging in Indochina? All the lies invented by the reactionary U.S. ruling circles to justify their aggression can no longer hoodwink and deceive the masses. More and more people have come to realize that the United States is fighting a "dirty war" in Indochina. Today, no force on earth can curb the American people's will to put an end to the war of aggression in Indochina. The mass movement against the war of aggression in Indochina has become an important part of the American people's revolutionary struggle.

The American people's antipathy to U.S. imperialism's war of aggression in Viet Nam and Indochina has been growing stronger and stronger year by year and their struggle has been spreading with each passing year. It is indeed a rare case in history that the people of a country oppose with such indomitable courage the aggressive war launched by the imperialists of their own country. Last May, the American students took the lead in plunging into the struggle against U.S. imperialism's dispatch of troops to invade Cambodia, and then the workers, the black people and broad sections of other people also rose in struggle. Four students in Kent University even laid down their lives in this struggle. They are the true heroes of the American people. Now, defying the U.S. Government's ban and intimidation, several hundred thousand American workers, black people, students, teachers, women, ex-servicemen, soldiers and people of religious circles took to the streets, demonstrating once again their will and strength in face of the U.S. reactionaries. The American people are worthy of the name of a valiant and militant contingent in the struggle of the people the world over against the common enemy, U.S. imperialism.

Our great leader Chairman Mao has said: "I am convinced that the American people who are fighting valiantly will ultimately win victory and that the fascist rule in the United States will inevitably be defeated."

The American people are a great people. Lenin once said: "The American people have a revolutionary tradition." More than 190 years ago when there was only a population of about 3 million in the North American colony, the American people dared to hold aloft their revolutionary banner, carried out a struggle for independence and defeated the self-styled "biggest power," the British Empire. The American working class is one of the largest working class contingents in the world. The overwhelming majority of the 22 million black people in the United States, who are suffering most bitterly from racial discrimination and class exploitation, are a great latent force of revolution which is most rebellious. They are the gravediggers of the American monopoly capitalist class. Such a people can never be the "silent majority" as Nixon described. They are bound to rise and overthrow the imperialist system and take their destiny in their own hands. The Chinese people and the people of the world place high hopes on the American people. We are deeply convinced that the daily awakening American people—who continuously temper themselves in struggle, accumulate experience step by step, realize and grasp the revolutionary truth—will through repeated trials of strength with the U.S. reactionaries and in unity with the people of the world in the struggle certainly achieve complete emancipation and make new and positive contributions to the progress of the history of mankind.

(*"Renmin Ribao" editorial, April 27*).

[From Issues and Studies: A Monthly Journal of Communist Problems and World Affairs, August, 1971]

Ping-Pong Diplomacy, United Front Work and Subversive Activities

(By Liu Mao-lan, Assistant Researcher, Institute of International Relations)

I.

We are now in the middle of 1971 and none of us can be sure what will happen during the rest of the year. However, there is one thing we can be sure of, that is, the so-called "ping-pong diplomacy" initiated by the Maoists will rank among the 10 most important news items of 1971 voted by the press at the end of the year.

There have been numerous comments on Peiping's recent diplomatic maneuvers which may be summarized as follows:

1. The Maoists intend to break their international isolation.

2. They are seeking expansion of foreign trade.

3. They are seeking to improve relations with the United States in order to alleviate military pressure from the Soviets.

The foregoing conclusions, reasonable as they are, have been reached by observers in the free world but, as a rule, they tend to underestimate the ambitions of the Chinese Communists.

In a recent news analysis, the New York Daily News observed that most of the correspondents who have been in mainland China, regardless of their impressions about what they witnessed, cannot answer the following questions: (1) What are the feelings of the women on mainland China who wear the same clothes as men, who have to labor all day, who cannot marry before the age of 25 and are allowed to have only two or three children after marriage? (2) What are the effects on those children who have been raised in nurseries and can only see their parents on weekends? (3) How can one explain the situation in which Red Guards who were set free in 1966 and ordered to demonstrate their "revolutionary zeal" by insulting their parents and teachers have now been subjected to military control and sent down to the countryside to perform manual labor? (4) What are the feelings of students who have done manual labor for three years or served in the military for three years? (5) What are the feelings of intellectuals who have to leave their libraries and laboratories and undergo manual labor? [1]

In fact, it is not difficult to answer these questions. They are, in a word, a result of the human practice of the Communists who regard all materials as their property and all human beings as their tools. Mao Tse-tung has remarked: "There is only human nature in the concrete, no human nature in the abstract. In a class society there is only human nature of a class character; there is no human nature above class." [2] In other words, for the Chinese Communists, human nature in a free and democratic world represents the interests of the bourgeois class, which is of course absurd. Therefore, we, as normal human beings, often fail to understand the behavior of the Maoists, just as the *New York Daily News* was puzzled by those questions.

However, the *Daily News* also pointed out that the treatment accorded the American correspondents during their visit to mainland China was more a diplomatic maneuver than a sincere expression.[3] This indicates that some of the Americans are also aware of the real nature of Peiping's ping-pong diplomacy.

II.

During their stay in Japan the Chinese Communist ping-pong players always carried a banner with them which read: "Friendship first, competition second." This reflected the Maoist tactic of "giving prominence to politics," however, it has not yet received due attention from Westerners. According to a dispatch filed by the Yugoslav news agency on April 25, Chou En-lai spoke in Peiping in the evening of April 24, saying that ping-pong diplomacy had no effect of Peiping's support of its "people for resisting US aggression." Apparently, despite its recent diplomatic offensive, the anti-American policy of the Maoists remains essentially unchanged.

On April 25 Chou told a gathering in Peiping in celebration of the first anniversary of the "Summit Conference of the Indochinese People convened upon the initiative of Samdech Norodom Sihanouk . . . has closely united the three peoples of Indochina into a staunch united front against U.S. imperialism and pushed their war against U.S. aggression and for national salvation to a new stage."

Sihanouk, the symbol of the remnant influence of the Cambodian feudalistic system, should be a deadly enemy of Communism. However, he has now become a mainspring of Peiping's united front activities as part of the Maoists' efforts for expansion in Southeast Asia.

With the fighting in South Vietnam gradually being taken over by the Vietnamese troops, the Maoists, feeling less pressure, are beginning to indulge more and more in the dream of "exporting revolution." To attain the goal of infiltration and subversion on a world-wide scale, they have adopted a smiling-face diplomacy of which the current ping-pong tactic constitutes an important link.

Following their ping-pong diplomacy, the Chinese Communists initiated a series of united front activities on the international scene, notably:

(1) In mid-May, three Peruvian journalists, were invited to visit mainland China. They toured Peiping, Canton, Nanking, Changsha and Shaoshan and returned home on May 15.[4] In mid-June a trade delegation from Peru led by General Javier Tantalean Vanini, minister of fisheries, was invited to visit Peiping. Chou told the visitors on June 14: "Peru is one of the oldest countries in Latin America with a long and praiseworthy history and culture. The struggle waged by the Peruvian Government and people to defend their right over 200 nautical miles of territorial sea waters is worthy of praise. The Chinese Government and people firmly support the people of Peru and other Latin American countries in their struggle to safeguard national independence and to defend their state sovereignty. One or two 'super powers' oppose you but the people the world over support your struggle." [5]

(2) On June 17 an economic and technical delegation arrived in Peiping from Iraq. The 11-member group led by Sadun Hammadi, minister of oil and mining, was welcomed at the Peiping airport by Fang Yi, Chinese Communist "minister of economic relations with foreign countries." These were "revolutionary masses" shouting: "We firmly support the Palestinians and other Arab people in their just struggle against the US-Israeli aggression," and "People of the world unite and defeat the US oppressors and all their running dogs." [6]

(3) The 17th Session of the Council of Ministers of the Organization of African Unity (OAU) opened on June 15 at Addis Ababa, capital of Ethiopia. Attended by 37 members, the meeting was going on in an atmosphere hostile to the free countries of the West. Auxence Ikonga, foreign minister of the People's Republic of Congo said: "We cannot build our future upon an arrangement with imperialism and its by-products. . . . The only chosen way is violence for the enslaved peoples in Africa to recover their own freedom and dignity." Sarin Chak, foreign minister of Sihanouk's exile govern-

Footnotes at end of article.

ment, was sent by the Maoists to attend the opening ceremonies of the council.[7]

(4) Vfernando Murillo Viana, secretary-general of the Chilean Committee of Solidarity with the Afro-Asian Peoples, and his wife were invited to visit mainland China where they met Kuo Mo-jo, Wang Hsiao-i, Wu Hsiao-ta and Li Yen-nien.[8]

(5) A women's basketball team was sent by the Maoists to visit Guinea. It arrived in Conakry on June 17. When received by Mme. Jeanne Martin, secretary-general of the All-African Women's Confederation, the team members told their host that the purpose of their visit was "friendship first, competition second."[9]

Other groups visiting mainland China included the Komeido Delegation from Japan and the Romanian Tourist Ministry Group.

In conjunction with these diplomatic activities, the Maoists were doing propaganda and educational work among CCP members and the general masses. For instance, (1) On April 24 of this year the *New China News Agency* (NCNA) released 32 slogans for the celebration of the International Labor Day on May 1, 11 items of which were anti-American. (2) on May 20 the *People's Daily*, the *Liberation Army Daily* and *Red Flag* published a joint editorial entitled "A Program for Anti-Imperialist Struggle," saying that Mao's statement—"People of the World, Unite and Defeat the U.S. Aggressors and All Their Running Dogs"—made on May 20, 1970 has become the program for "anti-imperialist struggle" of the "revolutionary people" of the world. The editorial stated: "A new high tide of struggle against U.S. imperialism is rising vigorously throughout the world . . . The Nixon government has landed itself in a blind alley and is at the end of its tether."

In view of the accounts cited above, we may conclude by saying that the Maoists have been concocting an unprecedented plot, that is, they have been stepping up subversive activities in the cultural, economic and political fields in an attempt to establish an extensive international anti-American united front to isolate the United States. They hope to damage American prestige by giving vigorous support to the Viet Cong and by sabotaging US-aid facilities in other countries. Once the opportunity presents itself, they will create chaos in the United States and seek to topple the American government from within.

The "united front" has been a consistent tactic of the Chinese Communists. Mao has made a telling revelation about CCP's three "magic weapons." He said: "Our eighteen years of experience have taught us that the united front, armed struggle and Party building are the Chinese Communist Party's magic weapons', its three principal magic weapons for defeating the enemy in the Chinese revolution."[10]

III.

On the surface, "united front" is not a very special term, suggesting the meaning of "united action." However, our painful experience has taught us a completely different story. Although the Chinese Communists have never given the term a clear definition, we may offer the following explanation by analyzing and summing up Communist activities in the past. The "united front" tactic does not necessarily need a specific organization, nor does it necessarily imply united action with a friendly party, army or country. It means exploitation of the other side during a certain period and under certain conditions. Since, the Communists always manage to hold the initiative, they are always the beneficiary while the other side is always the loser. The application of the tactic requires the division of the target into two; sometimes called the majority and the minority or sometimes called the Leftists and the Rightists, and the Communists will seek to "unite" with the majority to strike at the minority or to unite with the Leftists to strike at the Rightists. After the enemy at a certain stage is eliminated, the "friends" will again be divided into two, one group is to be united with and the other is to be attacked. This process of division will continue until finally the target is completely obliterated by the Communists.

When receiving members of the American ping-pong team on April 14, Chou En-lai told his guests that "a new page has been opened in relations between Chinese and American peoples." Many Americans have been fascinated by Chou's statement without probing into the real meaning of his words. To the Chinese Communists, the word "people" refer to the masses of workers and peasants as well as all "progressive" (pro-Peiping) elements. American government officials, industrialists, enterpreneurs and bankers are not considered as "people" by the Maoists. One of Peiping's slogans for the Labor Day this year said: "We firmly support the just struggle of the American people against the U.S. government's policies of aggression." Here we may get an idea about the Maoist meaning of "people."

In applying the "united front" tactic, the Maoists try to divide every country into two parts, one they need at this moment and the other they do not. Then they will seek to "unite" with the desired side to oppose the undesired one. Finally, when the country is considerably weakened by this tactic, they will seek to stage an open revolt to overthrow the government. A case in point was the abortive coup staged by the Indonesian Communists in September 1965 under the direction of the Peiping Communists. Peiping's relationship with Burma provides another example. Burma, the first Asian country to recognize Peiping, soon became a target of Communist aggression just like India. A report published in *Newsweek* on August 28, 1956 said that more than 700,000 Chinese migrants had secretly entered Burma in the previous two years. Professor Thompson of Wisconsin State University, after describing how the Chinese Communists infiltrated into Burma through both military and civilian channels, concluded that unless the world paid more attention to the situation in that area, Burma was doomed to be a victim of Communist expansion.[11] The Chinese Communists have always adopted a two-level policy toward Burma—while expressing willingness to "coexist peacefully" with the Burmese government they have continued to engage in sabotage activities in that country, including the dispatching of troops. The experience of Burma may serve as a good lesson to the present international appeasers.

On April 14 of this year President Nixon announced that materials of a nonstrategical nature would be permitted to be shipped from the United States to mainland China. Two months have passed since the announcement and yet the Maoists have not made any response. Obviously, they are not so much interested in exporting or importing goods as in "exporting revolution."

Recently, under the camouflage of ping-pong diplomacy, the Maoists have managed to put on a smiling face in their dealings with other countries. However, this does not mean an abatement of their hostility toward the United States. In addition to direct attacks through their mass media, they have played up reports on anti-American activities overseas. For instance:

1. An *NCNA* dispatch reported on June 15: "On June 14, 22 Latin American countries jointly submitted a document to the United States protesting the new sugar import quotas approved by the U.S. House of Representatives recently to the detriment of the economic interests of the Latin American countries. The document demanded the elimination of the coercive measures against the Latin American countries stipulated in the new U.S. Sugar Bill. The Latin American countries further decided to designate representatives of Mexico, the Dominican Republic, Argentina, Brazil and El Salvador to maintain contracts with the U.S. representatives over this issue."

2. An *NCNA* dispatch of June 14 said: "People of all strata in Cuba continue to issue statements and hold demonstrations in strong protest against the kidnapping of Cuban fishermen by US imperialists and the outrageous sentences passed on them. The aggression cannot frighten us but has increased our hatred for US imperialism and all its running dogs."

3. *NCNA* reported on June 15: "Workers, peasants and students held demonstrations and rallies in many places of the Philippines on June 12 strongly denouncing and protesting U.S. imperialism's aggression against their country. Seventy-three years ago on June 12 the Philippine people staged an uprising and proclaimed independence after defeating Spanish colonialism. In Manila 2,500 workers and students gathered in front of the U.S. Embassy that day and held a demonstration indignantly protesting the U.S. imperialists' stranglehold over the Philippine economic, political and military affairs and foreign relations. The demonstrators pointed out that U.S. imperialism is the biggest enemy of the Philippine people."

4. *NCNA* reported on June 22 that some countries and areas in Africa such as Angola and South Africa are still being ruled by imperialism and colonialism. Both new and old colonialists led by "U.S. imperialism", the report said, are exercising cruel Fascist rule and undertaking economic exploitation in these countries and areas. But the people have been putting up greater and greater resistance and their armed struggle for independence has already made considerable progress.

The Maoists have not only encouraged anti-American activities overseas, they have also set up subversive organizations within the United States itself. At a symposium sponsored by the Korea Chapter of the World People's Anti-Communist League in November 1969, Father Kyan pointed out that the American Communists had been using the "Islam movement," the "movement for revolutionary action," the "Committee for Racial Equality," and the "Students' Coordinating Committee for Non-Violence" for subversion and anti-war purposes in the United States. He stressed that this kind of Communist activities in other countries had in fact become an extension of "people's war."

A recent report in the *Herald Tribune* indicates that the American government has already been aware of the Communist conspiracy. It said: "The [US] government maintains a super-secret listing of so-called potential subversives—a file which would be the basis for numerous arrests in the event of war or an 'internal security emergency.' It is called the 'security index.' Although it has been in existence since at least the 1930s, the government does not admit it, even when Congress makes an inquiry. The index is a loosely-held list of the names, addresses, jobs and phone numbers of thousands of 'suspicious' Americans. A conservative guess based on public figures on subversives is that 10,000 are kept under scrutiny."[12]

The Chinese Communists have never abandoned their policy of expansion, including infiltration and subversion. Presently, they are not yet strong enough to have a direct confrontation with other big powers but, they are making active preparations for this possibility as can be seen from their Labor Day slogans such as: "The danger of a new world war still exists, and the peoples of all countries must get prepared. Revolution is the main trend in the world today. People of the world, unite and defeat the U.S. aggressors and their running dogs!" "We firmly

Footnotes at end of article.

support the just struggle of the American people against the U.S. government's policies of aggression and war and racial discrimination! We firmly support the struggle of the working class and revolutionary people of various countries in North America, Europe and Oceania!"

On April 27 the *People's Daily* published an editorial entitled "Salute the Heroically Struggling U.S. People." The article considered demonstrations in Washington and San Francisco on April 24 as indicating that the struggle between the American people and their government had entered a new stage. It said: "The American people deserve to be called a brave fighting contingent in the struggle of the peoples of the world against their common enemy—U.S. imperialism." "Chairman Mao said: 'I believe that the brave American people will finally win, while U.S. fascist rule will surely be defeated.'" In concluding, the article pointed out: "Lenin said: 'American people have their revolutionary tradition.' More than a century ago, when the population of the North American colony was slightly over 3 million, these people had the courage to hold high the revolutionary banner, struggle for their independence, and defeat the great British Empire. . . . The overwhelming majority of the 22 million black people, who suffer most from racial discrimination and class exploitation and whose opposition is the strongest, have strong revolutionary potential. They are the grave-diggers for the U.S. monopoly capitalist class. . . . They will surely completely emancipate themselves."

The editorial lays bare the Maoist plot against the United States.

FOOTNOTES

[1] *Central News Agency (CNA)*, June 15, 1971.

[2] Mao Tse-tung, "Talks at the Yemen Forum on Literature and Art," *Selected Works*, Vol. III Foreign Languages Press (Peking 1965), p. 90.

[3] *Ibid.*

[4] *NCNA*, Shanghai, May 15, 1971.

[5] *NCNA*, Peiping, June 14, 1971.

[6] *NCNA*, Peiping, June 17, 1971.

[7] *NCNA*, Addis Ababa, June 16, 1971.

[8] *NCNA*, Peiping, June 19, 1971.

[9] *NCNA*, Conakry, June 18, 1971.

[10] Mao, *op. cit.*, Vol. II, p. 288.

[11] *Lessons of History*, New China Publishing Co., Taipei, p. 105.

[12] *International Herald Tribune*, June 19, 1971.

COLONIALISM LIVES IN SOUTH AMERICA

HON. ROBERT F. DRINAN

OF MASSACHUSETTS

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. DRINAN. Mr. Speaker, I attach herewith a perceptive article with regard to our foreign policy in Latin America. This article, entitled "Colonialism Lives in South America," is written by Father Eugene K. Culhane, S.J., the managing editor of America magazine from 1956 to 1969 and now the director of the Latin American bureau of the U.S. Catholic Conference.

The following article written by an acknowledged expert in Latin American affairs appeared in the August 7, 1971, issue of America magazine, the National Catholic Weekly:

COLONIALISM LIVES IN SOUTH AMERICA

(By Eugene K. Culhane, S.J.)

It is hard to believe today that when slave ships brought their human cargoes to our shores, so few protested: the excuse was, I suppose, that the cotton economy needed slaves. And at the end of the 19th century, when our rugged-individualist business barons were devastating forests by their logging, and mountainsides by their stripmining—and paying starvation wages to immigrant workers—most pulpits and newspapers were silent. Wasn't that the necessary price of progress through capitalism?

Something very close to such villainy is going on today in our country's dealings with Latin America. And I am amazed that so few objections are raised here. Whether we realize it or not, our country's corporations, with our government's support, are engaged in a vast and highly integrated plan to keep Latin America in colonial status. We still talk in the lyric terms of the Alliance for Progress: about providing houses and schools, stressing social as much as economic gains, giving a cool handshake to dictators but a warm abrazo to democratic rulers. But those who have eyes and use them can see that the United States—through its corporations and its government—is exploiting the Latin American continent unmercifully.

I had long suspected that behind the bumbling and mishandling of our Latin American relations there was not only ineptitude but also some deliberate dirty dealing. But then it is hard to be certain—and one hates to impute motives without being completely sure. In the last year, however, I spent most of my time reading the Latin American press, and I now see that Latin Americans *think* we are enslaving them. A three-month visit to Latin America during that year strengthened my suspicions about our actions.

The picture came into sharper focus for me as I read a recently published book, *Revolution Next Door. Latin America in the 1970's* by Gary MacEoin (Holt, Rinehart and Winston. $6.95). MacEoin is no novice to Latin America, and he loves the United States as much as you and I do. But he is angry, as angry as you and I will be if we ponder the case histories he produces of our business world's and our government's collusion to bleed Latin America. In a word, U.S. government and U.S. business are keeping colonialism alive and well in Latin America.

Let us hear a Latin American whom MacEoin quotes: "The rich countries, both of the so-called free world and of the Soviet bloc, claim that they are trying to help us catch up with them, but their actions belie their words. We now know that our underdevelopment is an integral factor in their progress. They moved ahead in the first instance at our expense, and the continuance of their growth requires the maintenance of our backwardness. Naturally, they prefer that we should co-operate, but they have demonstrated—as in Brazil—that they will also use whatever force is necessary. The economic ministers of Latin America declared in a joint statement in 1969 that the poor countries are tired of carrying the weight of the development of the rich countries, especially those of North America."

They are tired, too, of our so-called aid. It will never make Latin America our equal. It isn't intended to; it is meant to keep that continent a colony within our empire, one that supplies our raw materials and buys our manufactures. Although in 1945 the UN promised to terminate the colonial system throughout the world, and in 1960 called for a decade of development, Latin Americans have lost faith in all that. They don't even want development: they want liberation. After twenty years of pursuing development, and seeing where it has gotten them, they will have no more of it. Like the man with the broken ankle who was advised to cure it by constant exercise, Latin America learned the hard way that development is not the remedy. It wants all foreign exploiters—but especially the big exploiter, the United States—off its back.

The Alliance for Progress completed Latin America's disillusionment. As I recall those days back in 1961 when it was announced, the man in the street here in the United States really wanted to help Latin America to make a new start, to escape from its economic and, especially, its social backwardness. But those on the inside must have known from the start that the words at Punta del Este were phony, that our few grants and many loans (most U.S. citizens think that under the Alliance everything is *given*) would change nothing substantial in the pattern of domination, but simply plunge Latin America deeper into debt. Anyway, that's how it has worked out: the grants have enriched the rich, the loans are paid off by the poor, and the domination is worse than before.

Latin America is so deep in debt today that a huge chunk of its GNP is garnisheed each year to service its foreign debt. "The more help we receive, the more debt we incur," a Chilean told MacEoin. The loans and even the grants have brought prosperity to the United States, though, because the money was almost always advanced with conditions, e.g., that it be used to purchase goods in the United States, that U.S. technicians be hired to install the new equipment, that U.S. vessels carry the goods, etc. How were such decisions reached? Corporation lobbies pressured Congress to attach those conditions. The loan company is not the poor man's friend.

Last January I was struck by the fact that when a group of Latin American editors met in Washington, D.C., they all talked enthusiastically about a publication from our country that one seldom hears of: the *NACLA Newsletter*, a monthly of the North American Congress on Latin America, whose articles research the techniques used by U.S. businesses to despoil Latin America. What it prints, stridently sometimes but accurately, evidently says something to Latin Americans. The liberal press here rarely takes on the enormous firms that advertise in *Fortune*. But the *NACLA Newsletter* does. And those are precisely the conglomerates that, as MacEoin shows, buy out successful Latin American businesses and squeeze out the others—as the supermarket chains in our country do to self-owned groceries.

I find it disconcerting that people in Latin America are increasingly anti-Yankee, that they increasingly look on you and me as the enemy. MacEoin thus describes what our economic power does to them: "Outsiders call the shots. Rapid fluctuations in the world prices of raw materials prevent any long-term planning. In addition, and particularly since World War II, the growth of science and technology in the rich countries has steadily eroded the base of the export market for raw materials. The plastics and other man-made material, first introduced as strategic substitutes for materials unavailable in wartime, are steadily improving in quality and falling in cost. In consequence, while factors within the rich countries cause the prices of their manufacturers to continue upwards, the price they pay for imported raw materials goes inexorably down."

Latin America, of course, is populated by people, and some of them down there are as venal and as quick to team up with Big Brother from the North for mutual gain as their counterparts anywhere else. Latin Americans call those plant bosses and other collaborators salaried by U.S. conglomerates "Herodians," because like Herod they collaborate with the foreign imperialist to crush their countrymen and share in the profits.

But the second part of our oppression of Latin America—the vicious role our government plays to support our business interests—is even more upsetting. The Rockefeller Report, on which the President relied when

he drew up his policy for Latin America in 1969, unblushingly advocated more repression to preserve the status quo, more police and military assistance to stamp out "subversion." Yet if ever there was a time when the free play of political feelings and a legitimate "subversion" of an obsolete social, economic and political order were needed in Latin America, it is today. But our government's contribution to the needs of that continent is to freeze the status quo. If Britain had had a CIA two centuries ago, the unrest in its American colonies would have been squashed in short order and the rebel leaders blackballed by instant teletype connections between the Redcoats' barracks throughout the 13 colonies. Thomas Jefferson and his co-signers of the Declaration of Independence would have been refused employment, denied press coverage, harassed by the police—and had their mail opened. That is what our anti-subversive military assistance brings about in Latin America—and you and I are being hated for it. We train police by the hundreds and thousands, from every country (Haiti is reported to be soliciting such help now, God save the mark), to set up an international file of information on "unsocial elements," on organizers of any groups even remotely classifiable as a challenge to the rotten, established order.

In his chapter on "La Cia" (the CIA), MacEoin documents instances of U.S. police instruction in the "third-degree" (torture) and other sophisticated methods of repression. "AID boasts that in fiscal 1968, 16,000 Brazilian police were trained under the Public Safety program, with the number increasing in each successive year . . . between 1964 and 1968, AID people gave counterinsurgency courses to more than 55,000 police officers in the Northeast alone." As of 1970, 50,581 Latin Americans had been trained under the military assistance program funded and staffed by AID. And these U. S. government specialists serve regimes that no impartial observer could call representative, that cling to the status quo, and that often are led by Herodians profiting from a sweetheart arrangement with U.S. economic interests. Meanwhile, under this umbrella of protection, the U.S. business takeover of Latin America's economy goes on. Once again, in the case of Brazil: "Foreign capital exceeds local private capital 72 to 28 in the production of capital goods; 78 to 22 in that of durable consumer goods; and 52 to 48 in that of nondurables. Only in commerce and services is local private capital still in control." Transfer to Latin America Jean Jacques Servan-Schreiber's judgment on what we are doing to Europe. Then realize how much weaker Latin America's economy is than Europe's—and you will understand what neocolonialism, backed by U.S. military, diplomatic and technological power, means there.

In its war on change, our government also tries to manipulate Latin America's labor relations and university life—two sensitive areas where an outsider would do well to tread warily. A Latin American labor organizer told MacEoin: "The AFL–CIO functions as an instrument of the State Department and the CIA to divide and control our trade union movement. This imperialist organization uses your American Institute for Free Labor Development to corrupt and control popular movements in all parts of the world, as we in Latin America know all too well. The AIFLD financed an 11-week strike in Guyana to the tune of $70,000 to bring down the Jagan government. It backed the invasion of Cuba and U.S. intervention in the Dominican Republic." If our goal were to benefit Latin America's labor, rather than integrate it into our economic plans, we would help the Christian Democratic labor unions too, which are grassroot groups, even if fiercely nationalistic. But while millions of dollars go to the affiliates of our own U.S. labor organizations, hardly a penny goes to other labor groups.

The U.S. also manipulates its educational assistance. Listen to the climax of MacEoin's account of what happened at the University of Antioquia, in Medellín, Colombia: "The U.S. methods and texts were producing a more thorough integration into the economy of the United States and also reinforcing the already enormous cultural invasion. Revelations in the mid-1960's that CIA funds were underwriting studies that had been presented as strictly academic, and that CIA agents sometimes masqueraded as university professors, brought student riots." That is only one case, it is true; and students can misinterpret bona fide aid plans. But our interference in Latin America's universities goes back to long before Project Camelot in Chile, and did not stop with it.

An intrinisic weakness in the democratic system is that when it gets too big for the town meeting kind of direct involvement by those responsible, then remote and faceless committees take over. In our case, we ask Congress to take over. But Congress depends on—and is the target of—lobbying, much of it by billion-dollar business interests. And back in the main offices of those mammoth businesses the directors are hounded to produce more and more profits, while the shareholders rarely inquire how the dividends are earned. Thus the poor Congressman is caught between the velvet threats of the lobbyist representing gigantic economic power and God knows how many votes, and his more or less well-informed conscience.

MacEoin has no suggestions about how to stop the abuses of U.S. capitalism. That is for another book, presumably by someone else. The Chileans and Cubans have despaired of the possibility of making capitalism work justly, out there where the raw materials come from. (It was U.S. big business they were thinking of when they repudiated capitalism, no doubt.) At the CICOP Conference last January, Dr. Helan Jaworski of Peru said he thinks it is now too hard and too late for us to change our tactics in Latin America, and that Latin America will therefore have to break clean with us, shut itself up in a closed world for several generations of isolated growth—deprived of our company, but at least liberated from our domination and thereby able to lift its head in freedom.

Meanwhile, who is worrying about whether our business interests in Latin America are too big for their britches, too powerful to bridle in the name of justice and respect for the other guy? A lot of us who love Latin America, who are unwilling to be involved in oppressing any people, go on unaware of the existing oppression. MacEoin's book is clear and cogent, but how wide a public will it reach? No doubt those highly placed leaders in our business and government circles who see what is happening, but go ahead none the less, will skim through this book. But they are unlikely to change their policies. They are guilty, and history will judge them harshly. But one can wonder if enough other Americans will read MacEoin's indictment—and do something about it—before the rupture between us and Latin America takes place.

DRUG ADDICTION, CAUSES AND PREVENTION

HON. EDWARD J. PATTEN

OF NEW JERSEY

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. PATTEN. Mr. Speaker, I am pleased and honored today to place in the CONGRESSIONAL RECORD a speech by my good friend, Dr. Herbert Boehm.

Dr. Boehm is the director of the Neuropsychiatry Section in the Department of Medicine at Perth Amboy General Hospital. In addition, he is a diplomat of the American Board of Psychiatry and Neurology, a fellow of the American Academy of Psychotherapy, the Academy of Phychosomatic Medicine and the Royal Society of Psychiatry of Great Britain. For many years, Dr. Boehm has served as a consultant to the World Health Organization and to the medical service of the United Nations.

In his recent speech entitled, "Drug Addiction — Causes and Prevention," which he delivered before the Royal College of psychiatry in London and the World Health Organization in Geneva, Dr. Boehm has summed up medical thinking in recognizing that drug addiction is more appropriately termed drug dependence. I know that my colleagues will be interested in Dr. Boehm's statements, because he outlines the effects that many drugs have on the mind and body. More important, however, is his insight into the causes of drug use as they relate to other problem areas in our society.

DRUG ADDICTION, CAUSES AND PREVENTION

(By Herbert Boehm)

Drug addiction was formerly classified under sociopathic personality disturbance, but otherwise not defined. The World Health Organization (W.H.O.) has recently replaced the terms, drug addiction and drug habituation, with the new term, drug dependence. We define drug dependence as a state arising from repeated administration of a drug on a periodic or continuous basis. We have to consider the drug dependence for each drug individually.

The World Health Organization definitions stress a desire or need to continue taking the drug, or let us say, a compulsive drug use or habituation. The drug dependence is with different substances psychologically, while other drugs, e.g., heroin, lead to bodily dependence, a persistent desire for the drug, a torturing abstinence symptom, which in turn leads to a tendency to a dosage increase of the drug involved. The chronic abuse of the drug causes a change of personality with several social sequels.

Drug abuse is a flight from a presence which is unacceptable to the artificial paradise of the dream world. The dependence on drugs is different with the various drugs. The patient may develop disturbances in contacts with people, pain and tension symptoms, fear, sleeplessness, and psychological disturbances.

Inadequate personality changes, neurotic disturbances, a broken home, puberty reaction, existence crises, and other crisis situations may develop. The drug abuse depends on the increased amount of drugs. Sociocultural factors and enjoyment have led in the last years to a considerable dependence on the drugs.

The drug dependence may show a dependence from harmless drugs to dangerous (Cannabis, Heroin), and from simple to severe dependence, with tranquilizers, sedatives and alcohol. The choice of the drug depends on the environment—Marihuana parties, trips in a group, the availability of the drug, and the personality of the individual. The make up of the individual may bring about an effect accordingly. For each drug and dosage, a pharmacodynamic effect exists and brings about euphoria, hallucinations, more vitality, depersonalization and increase of alertness. According to their existence, we have to distinguish between primary and secondary drug dependence.

Primary drug addition is a primary desire

for the drug because of an unacceptable situation. The secondary drug dependence has caused a constant desire for the drug because of long use, and thus develops as secondary desire for the drug. This drug is very important during the time of abstinence with crimes, and diminishes ability to stand trial.

The Bureau of Narcotics 1970 report of U.S.A. reports that the total number of active addicts is less than 150,000. The ratio of males to female in the list is generally about 3 or 4 to 1, and somewhat more than half the total are minority groups. Slightly more than half are between 21 and 30 years of age, and about a third are 31 to 40. Juveniles (under 20 years of age) constitute less than 4 per cent of the total. About 12 per cent are over 40.

The majority of present day addicts are derived from the most depressed districts in metropolitan slum areas. In such districts, relationships between parents and children are likely to be much more disturbed than in the typical middle class American family. The mother is likely to be the breadwinner, and the father, if he is present at all, is chronically unemployed. It is not surprising that delinquency is common. The relationship between addiction and delinquency is not a simple one. Studies have shown that there are areas with high delinquency but low narcotic addiction rates, and that in areas where both rates are high, crimes against property tend to be greater, and crimes against persons tend to be smaller in proportionate number. This suggests that narcotic addiction does not increase criminal activity in general, except for narcotic laws offenses. There is no doubt that sociological factors contribute greatly to the genesis of addiction, and we assume currently that personality factors interacting with sociological and pharmacological factors, constitute the major detriments of addiction.

Problems related to drug dependence come to the physician in several ways. Cases of acute or chronic toxicity usually come to medical attention if the individual himself or someone close to him decides he is sick or out of control. A patient may seek psychiatric contact for difficulties associated directly or indirectly with drug use. The patient may be suffering from obvious toxic or withdrawal effects of the drug.

The problem of drug dependence may come up unexpectedly in the course of medical management of other conditions, especially accidents, venereal disease, tuberculosis, pregnancy and hepatitis.

SOCIALLY ACCEPTABLE DRUGS

Alcohol bears the distinction of being the only potent drug that is universally accepted by society. The effects and toxicity of this drug are too well known to warrant a lengthy discussion. We are not sure of the exact concentration of alcohol in the blood that causes intoxication. It is generally agreed that a concentration of 200 mg percent is associated with mild to moderate intoxication. The fatal concentration lies between 500–800 mg per cent. Ironically, it is the one drug which is taken to make you feel "high," and yet it is socially acceptable. We can classify coffee and tea as drugs. Many British and Americans cannot begin their day without a morning cup. Caffeine is a potential central nervous system stimulant. It can stimulate all portions of the cortex. In 1928, nicotine was isolated from the leaves of tobacco. It has no therapeutic value now, but it was used at one time medically as a central nervous system stimulant. The dangerous effects of nicotine in tobacco are universally known.

Investigators have demonstrated that long-time users of heroin cannot be distinguished from the effects of heroin and morphine. The illicit popularity of heroin is probably due to the fact that on a weight basis, it is approximately two to three times as potent as morphine. Heroin is either inhaled like snuff, injected subcutaneously, but most often is administered intravenously. The addict often uses crude and sometimes filthy equipment. This is the reason for the high incidence of hepatitis among users.

The first time the drug is taken, the person may develop an anxiety reaction and physical reactions, such as nausea, vomiting and sweating. On the following occasions, he experiences a euphoric spasm, lasting approximately one minute. This has been likened by many addicts to a sexual climax. This in turn may be followed by a lethargic somnolent state in the addicts—he wants neither food, sex nor companionship. One addict has described heroin as "having all the advantages of death without its permanence." As with other narcotic drugs, tolerance develops to the respiratory depressant, analgesic and euphoric effects.

Recently there has been a higher mortality rate among addicts due to heroin overdosage, because the purity and strength of the drug is not known to the taker. Packets sold by pushers generally contain about 5 per cent heroin diluted with lactose or quinine. Sudden cessation of the drug without treatment causes withdrawal symptoms. These include lacrimation, running nose, yawning, perspiration, nausea, vomiting coryza. Gooseflesh indicates pilomotor activity. The skin resembles that of a plucked turkey, thus the common expression, "cold turkey."

C.N.S. DEPRESSANTS

The effects produced by barbiturate and nonbarbiturate hypnotics are similar to alcohol, depending on the dosage, situation and personality of the user. The drugs generally produce a physical and mental lethargy, slurred speech and loss of coordination.

As with alcohol and the opiates, a physical tolerance develops. An overdose can result in apnea, convulsions or respiratory arrest.

C.N.S. STIMULANTS

Stimulants and amphetamines are often used to increase mental awareness and create a feeling of well being. The sympathominetic amines are abused exclusively because of their euphoric effect. Unfortunately, no tolerance develops, and a toxic psychosis may occur after several weeks or months of use.

Cocaine causes a mood elevation, anorexia, analgesia, and is considered to be the most potent antifatigue agent known. The abuser frequently overestimates his ability to perform. Euphoria caused by the amphetamines and cocaine is reported by addicts to be very similar. If the dosage is large enough, toxic manifestations, including visual and auditory hallucinations, may occur. Death may come from respiratory depression.

HALLUCINOGENICS

L.S.D. is the most powerful and most frequently abused of the hallucinogenic drugs. "Acid" used to be eaten on sugar cubes; now tablets or capsules are usually used. The effects of this drug are very complicated, seeming to create visual distortions. It tends to distort emotions and perception. What was pretty becomes beautiful, what was annoying becomes terrifying. A so-called "trip" may last from 1 to 10 hours. Acts of suicide or violence indicate the profound influence of L.S.D. on the mind. Even months after the drug was taken, new occurrences may occur. This may happen if the drug user is particularly fatigued or under the influence of another drug. L.S.D. was first believed to cause birth defects. Mescaline and peyote are chemically related to amphetamine and produce acute color effect. They may cause an overestimation of the visual cortex.

D.M.T. (Dimethyl triphamine) is usually smoked with marihuana. It gives a similar but shorter effect than L.S.D. Its popularity has declined since it reportedly causes brain damage.

S.T.P. gives results similar to L.S.D., but the effect may last up to 90 hours. Emergency room personnel may think that the S.T.P. user has taken L.S.D. If Thorazine is administered, the patient may die of respiratory arrest.

Apparently none of these hallucinogenics produce physical dependence. Their danger lies in their psychological effects.

Cannabis (marihuana, hashish) is not pharmacologically a narcotic, but legally it is. Marihuana is not the plant, but the resinous preparation of brown and black flakes from the plant. Marihuana does not dilate the pupils. The active ingredient in the resin is a chemical known as T.H.C. (Tetrahydrocannabinol). The strength used varies, depending upon the part of the plant from which the dose is obtained. The concentrated resin, approximately six times as powerful as the leaf derivative, is called hashish. It is most often smoked. The drug can be mixed into foods and taken orally. The effects from marihuana use are relaxation, tranquility, light-headedness, some loss of bodily coordination, intensified sensory perception and a distortion of time.

We may find great joy or, on the other hand, acute anxiety. Hallucinations may occur. The drug may cause tachycardia, appetite for sweets, and conjunctivitis. While marihuana is not physically habit forming, an individual may develop a psychological dependence upon the drug, using it as an anti-depressant.

MISCELLANEOUS CHEMICALS

Volatile chemicals, such as glue and furniture polish, may achieve a hallucinogenic effect. Delusions of grandeur and delirium may be experienced. Side effects include blood dyscrasias, possible brain damage, conjunctivitis, dizziness, and swollen nose. One youth in New York City leaped from a 6th-floor roof while inhaling glue.

Seeds and spices, such as nutmeg and mace, are rarely considered drugs. Nutmeg, for example, has been used by prison inmates and may produce feelings of depersonalization and unreality.

TREATMENT PROBLEMS AND TECHNIQUES OF MANAGEMENT

There are a large number of drug users who regard themselves as neither criminal nor ill. The social drinker sees no reason why he should tell his physician or other advisor about his occasional use of alcohol, and the users of marihuana view themselves in the same way.

Acute drug reactions should be treated as medical problems. Not only is such care safer and more effective, but a larger fraction of patients can be induced to accept after-care from a purely medical facility than from a police physician or probation officer.

The compulsive drug user should seek psychotherapy, (including religious and self-help group.) Group therapy may be of use after treatment, for the acute withdrawal symptoms in a hospital. Conventional psychotherapy is far less effective than directive psychotherapy.

Another alternative is the access of the drug in some countries. Such a program continues to impose jail sentence for criminal activity, but not for mere use, or possession. It insists that the addict accept treatment and supervision.

British law permits dispensing narcotics to an addict. The British population has characteristics different from the U.S.A., but the fact remains that in 1970, with a population of 50 million, there were only 1,125 known heroin as addicts in England, in comparison with an estimate of 80,000 in the U.S.A. Associated criminal activity in England is neglible when compared to that in the U.S.A.

The goal of society's effort is control and

prevention rather than retribution. Only education and counseling offer any real hope.

The analogy of the boy who cried wolf is hard to avoid here since it is the professional drug expert's obvious duty to maintain his credibility among those groups who are most apt to need his advice as more and more new compounds come into the hands of the experimenters.

This must be done even at the risk of disapproval from others in the medical community who might hope that the prescriptions against all drugs will be uncritically heeded. Unfortunately, the young people who must be dealt with in this context are already partially alienated from the establishment we represent, and they have reserved to themselves the decision about what to believe.

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MORAVIAN MUSIC

HON. FRED B. ROONEY

OF PENNSYLVANIA

IN THE HOUSE OF REPRESENTATIVES

Monday, September 13, 1971

Mr. ROONEY. Mr. Speaker, I would like to call the attention of my colleagues to the Kennedy Center's first Sunday afternoon concert yesterday, September 12, when the Moravian Music Foundation presented a program composed almost entirely of Moravian music.

In 1741, the Moravians settled in northeastern Pennsylvania in Bethlehem, Nazareth, and Emmaus. Rich in talent and love of music, the Moravians established the first "collegium musicum" in this country only 3 years after the founding of their settlements.

Anthems, symphonies, and a variety of chamber music became famous in this early American center as well as in other colleges of music modeled after the first Moravian establishment.

This important era in the development of American music was recalled yesterday at the Kennedy Center concert.

With the single exception of a sinfonia by Johann Christoph Freidrich Bach, one of the sons of Sebastian Bach, the program was composed entirely of Moravian music. Included in the program were an overture by Charles Hommann, a quintet by Johann Friedrich Peter, and a "Water-music Suite" entitled "For a Boatride on the Lehigh" by David Moritz Michael. The Piedmont Chamber Orchestra, conducted by Nicholas Harsanyi, was joined by 34 members of the Westminster Choir in the highlight of the afternoon, a cantata entitled "The Dawn of Glory" by Christian Ignatius Latrobe.

The Moravian concert provided a fitting finale to the opening week of presentations at the magnificent Kennedy Center for the Performing Arts.

THE IDEAL SEVERANCE-TAX SOLUTION

HON. M. G. (GENE) SNYDER

OF KENTUCKY

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Mr. SNYDER. Mr. Speaker, an editorial which appeared in the Louisville Times on September 7, 1971, was called to my attention. I found it to be a fair evaluation of a bill I introduced in this session of Congress. This legislation would assist the States in raising needed revenues by making more uniform the incidence and rate of tax imposed by the States on the severance of minerals from mineral property located within the United States.

We are all only too well aware of the need of the States and localities for more revenues to finance necessary expenditures. At the same time there are many States that have found it a difficult task to impose such a severance tax, because such States run the risk of placing some mineral companies operating within the State at a competitive disadvantage relative to companies operating where there are no severance taxes. These States are conscious of the fact that enactment of such a State severance tax would reduce mining activity within the State.

Such Federal legislation would bring about an equitable means of taxation for sorely needed revenue not only in Kentucky, but by most States with the ever-increasing demands for improving State public services.

I call this editorial to the attention of my colleagues:

[From the Louisville Times, Sept. 7, 1971]

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If the current drive for a Kentucky severance tax on coal succeeds, it might prod Congress into encouraging similar legislation in other mining states. This the lawmakers could do by levying a federal tax on minerals with its proceeds made available to the states for the asking.

Bills for this purpose have been before Congress since 1968. Sponsored by Kentucky's Rep. Gene Snyder, a Republican, and Sen. Lee Metcalf, a Montana Democrat, they call for a federal tax of 5 per cent of the gross income from all minerals removed from the earth, but with a provision that state severance-tax payments would be credited against the federal levy up to the full amount.

This obviously would put producers in the various mining states on an equal footing competitively, thus removing what until now has been a formidable argument against tax action by the states individually.

Coal operators particularly have benefited from the competition argument. Some 20 states have a severance tax on oil and gas, several also tax the various ores, but only a small handful tax coal and none of these is a major producer. In short, Kentucky and the other big coal states have let fear of competition cause them to neglect this lucrative source of badly-needed revenue.

The federal legislation that would end this costly dilemma has attracted little attention in the past. However, with Kentucky's current gubernatorial race generating fresh interest in a state severance tax, there are signs that the picture may be changing. As Ward Sinclair of our Washington bureau has pointed out, some Kentucky coal men are beginning to look upon the Snyder-Metcalf proposal as the lesser of what they regard as two evils.

As one Kentucky producer has expressed it: "Our position is that, if there is a severance tax on coal, we prefer that it be handled in such a way as not to discriminate in the price of coal from one state to another."

That is the whole purpose of the proposed federal legislation, and it is more than a little ironic that it has attracted so little notice among those who have been loudly clamoring for revenue sharing. As Senator Metcalf has remarked, here is "a type of revenue sharing" that would benefit both federal and state governments. He estimates the states would realize nearly $700 million annually from resources they now are letting go untapped, while the federal government would come out $430 million ahead from a companion tax on minerals imported from abroad.

Kentucky's stake in the Snyder-Metcalf proposal is estimated at $30 million a year or thereabout. In view of this state's education and other needs, that should be incentive enough for Mr. Snyder's Kentucky colleagues in House and Senate to lend him a hand in getting his bill moving. Maybe they will if the governor's race continues to generate pressure for a state severance tax regardless of what Congress does or doesn't do.