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ECONOMIC EFFECT OF VIETNAM SPENDING

HEARINGS
BEFORE THE
JOINT ECONOMIC COMMITTEE
CONGRESS OF THE UNITED STATES
NINETIETH CONGRESS
FIRST SESSION

Volume II
The Military Impact on the American Economy:
Now and After Vietnam
A Compendium of Statements, Articles, and Papers
Compiled as Background Material



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ECONOMIC EFFECT OF VIETNAM SPENDING

THE MILITARY IMPACT ON THE AMERICAN ECONOMY: NOW AND AFTER VIETNAM

A COMPENDIUM OF STATEMENTS, ARTICLES, AND PAPERS

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Part I

THE MILITARY PROGRAM OF THE UNITED STATES

This section consists of official statements of Secretary of Defense Robert S. McNamara on defense programs and budgets.

**STATEMENT OF SECRETARY OF DEFENSE
ROBERT S. McNAMARA**

(Before the Subcommittee on Department of Defense Appropriations of the Senate Committee on Appropriations (amendment to the fiscal year 1966 defense budget), August 4, 1965)

Mr. Chairman, members of the committee, last Wednesday President Johnson informed the Nation of the mounting Communist aggression in South Vietnam and the additional measures which we plan to take to assist the people of that country in defending their freedom and independence. We are here today to report on that situation, to review with you the additional military actions involved, and to request the funds required to finance these actions pending the submission of a detailed fiscal year 1966 supplemental request to the Congress when it convenes in January.

Although Vietnam is now the focus of attention, we are not overlooking the possibility that trouble may arise in other areas of the world, perhaps as a reaction to our increased effort in that country or for other reasons. Accordingly, in planning for the increased deployment of U.S. forces to southeast Asia, we have also taken into account the forces which may be needed to meet contingencies elsewhere. Although we have no basis to assume at this time that the Soviet Union or Communist China would deliberately provoke new crises in other areas, prudence dictates that we be prepared for such emergencies.

The issue in Vietnam is essentially the same as it was in 1954 when President Eisenhower said:

I think it is no longer necessary to enter into a long argument or exposition to show the importance to the United States of Indochina and of the struggle going on there. No matter how the struggle may have started, it has long since become one of the testing places between a free form of government and dictatorship. Its outcome is going to have the greatest significance for us, and possibly for a long time into the future.

We have here a sort of cork in the bottle, the bottle being the great area that includes Indonesia, Burma, Thailand, all of the surrounding areas of Asia with its hundreds of millions of people * * *

What is at stake there is the ability of the free world to block Communist armed aggression and prevent the loss of all of southeast Asia, a loss which in its ultimate consequences could drastically alter the strategic situation in Asia and the Pacific to the grave detriment of our own security and that of our Allies. While 15 years ago, in Korea, Communist aggression took the form of an overt armed attack, today in South Vietnam it has taken the form of a large scale intensive guerrilla operation. The covert nature of this aggression, which characterized the earlier years of the struggle in South Vietnam, has now all but been stripped away. The control of the Vietcong effort by the regime in Hanoi, supported and incited by Communist China, has become increasingly apparent.

The struggle there has enormous implications for the security of the United States and the free world, and for that matter, the Soviet Union as well. The North Vietnamese and the Chinese Communists have chosen to make South Vietnam the test case for their particular version of the so-called wars of national liberation. The extent to which violence should be used in overthrowing non-Communist governments has been one of the most bitterly contested issues between the Chinese and the Soviet Communists. Although the former Chairman, Mr. Khrushchev, fully endorsed wars of national liberation as the preferred means of extending the sway of communism, he cautioned that "this does not necessarily mean that the transition to socialism will everywhere and in all cases be linked with armed uprising and civil war. * * * Revolution by peaceful means accords with the interests of the working class and the masses."

The Chinese Communists, however, insist that:

Peaceful coexistence cannot replace the revolutionary struggles of the people. The transition from capitalism to socialism in any country can only be brought about through proletarian revolution and the dictatorship of the proletariat in that country. * * * The vanguard of the proletariat will remain unconquerable in all circumstances only if it masters all forms of struggle—peaceful and armed, open and secret, legal and illegal, parliamentary struggle and mass struggle, and so forth. (Letter to the Central Committee of the Communist Party of the Soviet Union, June 14, 1963.)

Their preference for violence was even more emphatically expressed in an article in *The Peking Peoples Daily* of March 31, 1964:

It is advantageous from the point of view of tactics to refer to the desire for peaceful transition, but it would be inappropriate to emphasize the possibility of peaceful transition. * * * the proletarian party must never substitute parliamentary struggle for proletarian revolution or entertain the illusion that the transition to socialism can be achieved through the parliamentary road. Violent revolution is a universal law of proletarian revolution. To realize the transition to socialism, the proletariat must wage armed struggle, smash the old state machine and establish the dictatorship of the proletariat * * *

"Political power," the article quotes Mao Tse-tung as saying, "grows out of the barrel of a gun."

Throughout the world we see the fruits of these policies and in Vietnam, particularly, we see the effects of the Chinese Communists' more militant stance and their hatred of the free world. They make no secret of the fact that Vietnam is the test case, and neither does the regime in Hanoi. General Giap, head of the North Vietnamese Army, recently said that "South Vietnam is the model of the national liberation movement of our time. * * * If the special warfare that the U.S. imperialists are testing in South Vietnam is overcome, then it can be defeated everywhere in the world." And, Pham Van Dong, Premier of North Vietnam, pointed out that "the experience of our compatriots in South Vietnam attracts the attention of the world, especially the peoples of South America."

It is clear, therefore, that a Communist success in South Vietnam would be taken as positive proof that the Chinese Communists' position is correct and they will have made a giant step forward in their efforts to seize control of the world Communist movement. Furthermore, such a success would greatly increase the prestige of Communist China among the nonaligned nations and strengthen the position of their followers everywhere. In that event we would then have to be prepared to cope with the same kind of aggression in other parts of

the world wherever the existing governments are weak and the social structures fragmented. If Communist armed aggression is not stopped in Vietnam, as it was in Korea, the confidence of small nations in America's pledge of support will be weakened and many of them, in widely separated areas of the world, will feel unsafe.

Thus, the stakes in South Vietnam are far greater than the loss of one small country to communism. Its loss would be a most serious setback to the cause of freedom and would greatly complicate the task of preventing the further spread of militant Asian communism. And, if that spread is not halted, our strategic position in the world will be weakened and our national security directly endangered.

It was in recognition of this fundamental issue that the United States, under three Presidents, firmly committed itself to help the people of South Vietnam defend their freedom. That is why President Eisenhower warned at the time of the Geneva Conference in July 1954 that "* * * any renewal of Communist aggression would be viewed by us as a matter of grave concern." That is why President Johnson in his statement last Wednesday made it clear to all the world that we are determined to stand by our commitment and provide whatever help is required to fulfill it.

CONDITIONS LEADING TO THE PRESENT SITUATION IN SOUTH VIETNAM

Essential to a proper understanding of the present situation in South Vietnam is a recognition of the fact that the so-called insurgency there is planned, directed, controlled, and supported from Hanoi. True, there is a small dissident minority in South Vietnam, but the Government could cope with it if it were not directed and supplied from the outside. As early as 1960, at the Third Congress of the North Vietnamese Communist Party, both Ho Chi Minh and Vo Nguyen Giap, the commander in chief of the North Vietnamese armed forces, spoke of the need to "step up" the "revolution in the South." In March 1963 the party organ *Hoc Tap* stated that the authorities in South Vietnam "are well aware that North Vietnam is the firm base for the southern revolution and the point on which it leans, and that our party is the steady and experienced vanguard unit of the working class and people and is the brain and factor that decides all victories of the revolution."

Yet through most of these years the North Vietnamese Government denied and went to great efforts to conceal the scale of its personnel and materiel support, in addition to direction and encouragement, to the Vietcong. It had strong reasons to do so.

First of all, in 1954 the authorities in Hanoi had pledged to "respect the territory under the military control of the other party"—South Vietnam—"and engage in no hostile act against the other party." In 1962 those same authorities pledged that they would "not use the territory of the Kingdom of Laos for interference in the internal affairs of other countries."

The North Vietnamese regime had no wish to force upon the attention of the world its massive and persistent violations of those pledges. Nor was it anxious for its own citizens to dwell upon the ultimate risks of committing, unequivocally, aggression across international

boundaries. Nor could the Vietcong cause be anything but harmed if it were to be recognized openly in the South as an instrument of the North Vietnamese regime.

However, in building up the Vietcong forces for a decisive challenge, the authorities in North Vietnam have increasingly dropped the disguises that gave their earlier support a clandestine character.

Through 1963, the bulk of the arms infiltrated from the North were old French and American models acquired prior to 1954 in Indochina and Korea. Now, the flow of weapons from North Vietnam consists almost entirely of the latest arms acquired from Communist China; and the flow is large enough to have entirely re-equipped the main force units, despite the capture this year by government forces of thousands of these weapons and millions of rounds of the new ammunition.

Likewise, through 1963, nearly all the personnel infiltrating through Laos, trained and equipped in the North and ordered South, were former Southerners. But in the last 18 months, the great majority of the infiltrators—more than 10,000 of them—have been ethnic Northerners, mostly draftees ordered into the People's Army of Vietnam for duty in the South. And it now appears that, starting their journey through Laos last December, from one to three regiments of a North Vietnamese regular division, the 325th Division of the North Vietnamese Army, have deployed into the Central Highlands of South Vietnam for combat alongside the Vietcong.

Thus, despite all its reasons for secrecy, Hanoi's desire for decisive results this summer has forced it to reveal its hand even more openly.

The United States during the last 4 years has steadily increased its help to the people of South Vietnam in an effort to counter this ever-increasing scale of Communist aggression. These efforts achieved some measure of success during 1962. The South Vietnamese forces in that year made good progress in suppressing the Vietcong insurrection. Although combat deaths suffered by these forces in 1962 rose by 11 percent over the 1961 level (from about 4,000 to 4,450), Vietcong combat deaths increased by 72 percent (from about 12,000 to 21,000). Weapons lost by the South Vietnamese fell from 5,900 in 1961 to 5,200 in 1962, while the number lost by the Vietcong rose from 2,750 to 4,050. The Government's new Strategic Hamlet program was just getting underway and was showing promise. The economy was growing and the Government seemed firmly in control. Therefore, when I appeared before this committee in early 1963, I was able to say:

* * * victory over the Vietcong will most likely take many years. But now, as a result of the operations of the last year, there is a new feeling of confidence, not only on the part of the Government of South Vietnam but also among the populace, that victory is possible.

But at the same time I also cautioned:

We are not unmindful of the fact that the pressures on South Vietnam may well continue through infiltration via the Laos corridor. Nor are we unmindful of the possibility that the Communists, sensing defeat in their covert efforts, might resort to overt aggression from North Vietnam. Obviously, this latter contingency could require a greater direct participation by the United States. The survival of an independent government in South Vietnam is so important to the security of all of southeast Asia and to the free world that we must be prepared to take all necessary measures within our capability to prevent a Communist victory.

Unfortunately, the caution voiced in early 1963 proved to be well founded. Late in 1963, the Communists stepped up their efforts and the military situation began to deteriorate. The Diem government came under increasing internal pressure and in November it was overthrown. A year ago last February, I had to tell this committee that:

The Vietcong was quick to take advantage of the growing opposition to the Diem government and the period of uncertainty following its overthrow. Vietcong activities were already increasing in September and continued to increase at an accelerated rate in October and November particularly in the Delta area. And I must report that they have made considerable progress since the coup.

Following the coup, the lack of stability in the central government and the rapid turnover of key personnel, particularly senior military commanders, began to be reflected in combat operations and throughout the entire fabric of the political and economic structure. And, in 1964 the Communists greatly increased the scope and tempo of their subversive efforts. Larger scale attacks became more frequent and the flow of men and supplies from the North expanded. The incidence of terrorism and sabotage rose rapidly and the pressure on the civilian population was intensified. The deteriorating military situation was clearly reflected in the statistics. South Vietnamese combat deaths rose from 5,650 in 1963 to 7,450 in 1964 and the number of weapons lost from 8,250 to 14,100. In contrast, Vietcong combat deaths dropped from 20,600 to 16,800 and, considering the stepped-up tempo of activity, they experienced only a very modest rise in the rate of weapons lost (from 5,400 to 5,900).

At various times in recent months, I have called attention to the continued buildup of Communist forces in South Vietnam. I pointed out that although these forces had not been committed to combat in any significant degree, they probably would be after the start of the monsoon season. It is now clear that these forces are being committed in increasing numbers and that the Communists have decided to make an all-out attempt to bring down the Government of South Vietnam. The entire economic and social structure is under attack. Bridges, railroads, and highways are being destroyed and interdicted. Agricultural products are being barred from the cities. Electric powerplants and communication lines are being sabotaged. Whole villages are being burned and their population driven away, increasing the refugee burden on the South Vietnamese Government.

As I mentioned, in addition to the continued infiltration of increasing numbers of individuals and the acceleration of the flow of modern equipment and supplies, organized units of the North Vietnamese army have been identified in South Vietnam. We now estimate the hard-core Vietcong strength at some 70,000 men, including a recently reported increase in the number of combat battalions. In addition, they have some 90,000 to 100,000 irregulars and some 30,000 in their political cadres, i.e., tax collectors, propagandists, etc. We have also identified at least three battalions of the regular North Vietnamese Army, and there are probably considerably more. At the same time the Government of South Vietnam has found it increasingly difficult to make a commensurate increase in the size of its own forces, which now stand at about 545,000 men, including the regional and local defense forces but excluding the national police.

Combat deaths on both sides have been mounting—for the South Vietnamese from an average of 143 men a week in 1964 to about 270

a week for the 4-week period ending July 24 this year. Vietcong losses have gone from 322 a week last year to about 680 a week for the 4-week period ending July 24. Most important, the ratio of South Vietnamese to Vietcong strength has seriously declined in the last 6 or 7 months from about 5 to 1 to about 3 or $3\frac{1}{2}$ to 1; the ratio of combat battalions is substantially less. This is far too low a ratio for a guerrilla war even though the greater mobility and firepower provided to the South Vietnamese forces by the United States help to offset that disadvantage. The South Vietnamese forces have to defend hundreds of cities, towns, and hamlets while the Vietcong are free to choose the time and place of their attack. As a result, the South Vietnamese forces are stretched thin in defensive positions, leaving only a small central reserve for offensive action against the Vietcong, while the latter are left free to concentrate their forces and throw them against selected targets. It is not surprising, therefore, that the Vietcong retains most of the initiative.

Even so, we may not as yet have seen the full weight of the Communist attack. Presently, the situation is particularly acute in the northern part of the country where the Communists have mobilized large military forces which pose a threat to the entire region and its major cities and towns. Our air attacks may have helped to keep these forces off balance but the threat remains and it is very real.

Clearly, the time has come when the people of South Vietnam need more help from us and other nations if they are to retain their freedom and independence. We have already responded to that need with some 75,000 U.S. military personnel, including some combat units. This number will be raised to 125,000 almost immediately with the deployment of the Air Mobile Division and certain other forces. But, more help will be needed in the months ahead and additional U.S. combat forces will be required to back up the hard pressed Army of South Vietnam. Two other nations have provided combat forces—Australia and New Zealand. We hope that by the end of this year others will join them.

ROLE OF U.S. COMBAT FORCES IN SOUTH VIETNAM

As I noted earlier, the central reserve of the South Vietnamese Army has been seriously depleted in recent months. The principal role of U.S. ground combat forces will be to supplement this reserve in support of the front line forces of the South Vietnamese Army. The indigenous paramilitary forces will deal with the pacification of areas cleared of organized Vietcong and North Vietnamese units, a role more appropriated for them than for our forces.

The Government of South Vietnam's strategy, with which we concur, is to achieve the initiative, to expand gradually its area of control by breaking up major concentrations of enemy forces, using to the maximum our preponderance of air power, both land and sea based. The number of "fixed-wing" attack sorties by U.S. aircraft in South Vietnam will increase manyfold by the end of the year. Armed helicopter sorties will also increase dramatically over the same period, and extensive use will be made of heavy artillery, both land based and sea based. At the same time our air and naval forces will continue to interdict the Vietcong supply lines from North Vietnam, both land and sea.

Although our tactics have changed, our objective remains the same. We have no desire to widen the war. We have no desire to overthrow the North Vietnamese regime, seize its territory, or achieve the unification of North and South Vietnam by force of arms. We have no need for permanent military bases in South Vietnam or for special privileges of any kind. What we are seeking through the planned military buildup is to block the Vietcong offensive, to give the people of South Vietnam and their armed forces some relief from the unrelenting Communist pressures—to give them time to strengthen their government, to reestablish law and order, and to revive their economic life which has been seriously disrupted by Vietcong harassment and attack in recent months. We have no illusions that success will be achieved quickly, but we are confident that it will be achieved much more surely by the plan I have outlined.

INCREASES IN U.S. MILITARY FORCES SINCE 1961

Fortunately, we have greatly increased the strength and readiness of our Military Establishment since 1961, particularly in the kinds of forces which we now require in southeast Asia. The Active Army has been expanded from 11 to 16 combat-ready divisions; 20,000 men have been added to the Marine Corps to allow them to fill out their combat structure and at the same time facilitate the mobilization of the Marine Corps Reserve. The tactical fighter squadrons of the Air Force have been increased by 51 percent. Our airlift capability has more than doubled. Special Forces trained to deal with insurgency threats have been multiplied elevenfold. General ship construction and conversion has been doubled.

During this same period, procurement for the expanded force has been increased greatly: Air Force Tactical aircraft from \$360 million in 1961 to about \$1.1 billion in the original fiscal year 1966 budget; Navy aircraft—from \$1.8 billion to \$2.2 billion; Army helicopters—from 286 aircraft to over 1,000. Procurement of ordnance, vehicles and related equipment was increased about 150 percent in the fiscal year 1962-64 period, compared with the preceding 3 years. The tonnage of modern nonnuclear air-to-ground ordnance in stock tripled between fiscal year 1961 and fiscal year 1965. In brief, the Military Establishment of the United States, today, is in far better shape than it ever has been in peacetime to face whatever tasks may lie ahead.

Nevertheless, some further increases in forces, military personnel, production and construction will be required if we are to deploy additional forces to southeast Asia and provide for combat consumption while at the same time maintaining our capabilities to deal with crises elsewhere in the world.

FURTHER INCREASES IN THE FORCE STRUCTURE AND MILITARY PERSONNEL

To offset the deployments now planned to southeast Asia, and provide some additional forces for possible new deployments, we propose to increase the presently authorized force levels. These increases will be of three types: (1) additional units for the Active Forces, over and above those reflected in the January budget; (2) military personnel

augmentations for presently authorized units in the Active Forces to man new bases, to handle the larger logistics workload, etc.; and (3) additional personnel and extra training for selected Reserve component units to increase their readiness for quick deployment. We believe we can achieve this buildup without calling up the Reserves or ordering the involuntary extension of tours, except as already authorized by law for the Department of the Navy. Even here the extension of officer tours will be on a selective basis and extensions for enlisted men will be limited, in general, to not more than 4 months.

Our present estimate of the numbers of military personnel involved are shown on the table following this statement.

1. INCREASE IN ARMY FORCES

For the Army, we plan to activate one division force, three brigade forces, a large number of helicopter companies, and their combat service support units. In addition, we plan to replace the military personnel drawn from the Strategic Army Forces to provide logistic support in Vietnam. The buildup of these forces will require a substantial expansion of the Army training establishment. The larger deployments to South Vietnam and the increase in Army military personnel generally will result in a higher number of men in transit and other support activities. A military personnel strength increase in the Army of 235,000 is provided for these purposes.

2. AUGMENTATION OF THE THREE MARINE CORPS DIVISION/AIRCRAFT WINGS

Some 30,000 additional military personnel have been provided for the Marine Corps to augment existing units and to activate certain new units, such as helicopter squadrons, and communication, engineer, and military police battalions, and to provide for the increased training and manpower pipeline requirements.

3. STRENGTHENING THE NAVAL FORCES

The increased tempo of attack carrier operations and the intensified coastal patrol off Vietnam will require a small increase in the number of active ships in the Navy as well as an increase in the manning of the ships deployed to that area. These ships are required to operate at close to wartime tempos and therefore require higher manning levels than normally provided other fleet units. Furthermore, additional Navy personnel are needed to operate the new ports now being built in South Vietnam and to support the heavier logistics load at other bases. Other support activities, including pipeline, account for the balance of 35,000 additional personnel provided for the Navy.

4. AUGMENTATION OF THE AIR FORCE STRIKE AND AIRLIFT CAPABILITIES

In addition to the increased number of tactical attack sorties, we are also planning more B-52 sorties from Guam. To support the B-52 aircraft to be utilized for this mission, additional personnel will be needed at Guam, to handle ammunition, increased maintenance, and so forth. Support of the additional tactical fighter and troop carrier squadrons deployed to southeast Asia will require more men.

With the greatly increased flow of traffic to South Vietnam, a further early increase in our airlift capability is indicated. We plan to approximately double our existing capability for sustained operations through higher rates of utilization of present airlift aircraft. The more modern MATS aircraft, which now have a planned utilization rate of 5 hours per day, will be raised and held at 8 hours per day. The C-130E troop carrier aircraft in Tactical Air Command and in the Pacific, which now have a planned operating rate of 1½ hours per day, will be raised and held at 5 hours per day. More personnel will be needed.

The increase in the number of Air Force military personnel will require an expansion of the training establishment, which together with other support activities, principally the logistics base, will require a total increase in the Air Force end fiscal year 1966 military personnel strength of 40,000.

In total, 340,000 military personnel will be added to the active forces. To provide this additional strength, the current draft call rate of about 17,000 per month will be approximately doubled.

5. INCREASED READINESS FOR THE RESERVE COMPONENTS

As I noted earlier, we must be prepared to deploy additional forces to southeast Asia over and above those now planned. Furthermore, we must also be prepared to deal with crises elsewhere in the world. Accordingly, steps should be taken now to raise still further the readiness of selected Reserve component forces so that they could be quickly deployed if the need should arise.

There are a number of steps which could be taken towards this end. The units could be manned at full strength, the number and duration of the paid drills could be increased, additional tours of active duty for training could be provided, the equipment required for movement could be identified and earmarked, etc.

Shown on the table are the selected Reserve component forces whose readiness we believe should be raised over the next few months. The Army forces (three divisions and six brigades) will require additional personnel to raise their manning to the desired levels. These personnel can be obtained by enlisting additional men from civilian life or by reassigning men from Reserve units for which there is no military requirement.

The required increase in Reserve Force readiness could be greatly facilitated by the realignment of Reserve Forces which we proposed in the fiscal year 1966 budget. The realignment would permit us to concentrate men, equipment, and civilian technicians in the units we need for our contingency plans, instead of spreading them over a large number of units for which there is no military requirement. This was the primary objective of our realignment proposal and the events of the last few months have demonstrated the soundness of that objective. In my judgment, the realignment should go forward without further delay.

For the Marine Corps Reserve, we propose to add 2,500 paid drill training spaces to raise the manning of the 4th Division/Aircraft Wing (nine battalions and nine attack/fighter squadrons).

About 4,000 additional paid drill spaces will be provided to the Air Force Reserve components to raise the manning of nine fighter

squadrons, four tactical reconnaissance squadrons and 11 airlift squadrons to full authorized strength. We expect that all of these units will be ready to deploy on 24-hour notice by the end of this calendar year.

6. OTHER MILITARY PERSONNEL AND OPERATION AND MAINTENANCE COSTS

Over and above the costs of the additional military personnel, there will also be increased costs for the operation of installations and facilities in southeast Asia; the increases in flying and steaming hours; the consumption of spares and repair parts; and the transportation of supplies and equipment to southeast Asia. An increase of almost 36,000 "direct hire" civilian employees, raising the total at end fiscal year 1966 to just short of 1 million, will also be required.

None of these personnel and operation and maintenance costs can be estimated with any degree of precision at the present time. We have yet to work out detailed personnel plans and to calculate, on a phased basis, the increases in activity rates, movements of troops and materiel and other operation and maintenance costs associated with the buildup in southeast Asia. However, by the time we appear here next January with the fiscal year 1967 budget estimates, we will have completed this work and we will have a much more precise estimate of all of these additional costs and our financial requirements for the balance of fiscal year 1966. Accordingly, we propose that these additional military personnel and operation and maintenance costs be financed during the interim under section 512 of the fiscal year 1966 Defense appropriations bill, as approved by the House (H.R. 9221).

Subsection 512(a) of the Bill provides that:

During the current fiscal year, the President may exempt appropriations, funds, and contract authorizations, available for military functions under the Department of Defense, from the provisions of subsection (c) of section 3679 of the Revised Statutes, as amended, whenever he deems such action to be necessary in the interests of national defense.

Subsection 512(c) provides that:

Upon determination by the President that it is necessary to increase the number of military personnel on active duty beyond the number for which funds are provided in this Act, the Secretary of Defense is authorized to provide for the cost of such increased military personnel, as an excepted expense in accordance with the provisions of Revised Statutes 3732 (41 U.S.C. 11).

PROCUREMENT AND CONSTRUCTION

As in the case of personnel and operation and maintenance costs, we have not as yet had sufficient time to develop detailed requirements and production and construction plans for the additional

materiel and facilities needed for the support of the expanding operations in southeast Asia. And again, we will be in a much better position next January to provide these details and to state our additional requirements for the balance of fiscal year 1966. The \$1.7 billion amendment to the bill now before the committee which we are proposing at this time will provide the additional financing needed through January to gear up the production machine—to accelerate the delivery of essential items already in production and to initiate the production of new items required for the support of our forces in southeast Asia, as well as the construction of the most urgently needed facilities. We suggest that this amendment take the form of a new appropriation account—"Emergency fund, southeast Asia"—and that the language be similar, except for the amount, to the \$700 million fiscal year 1965 supplemental for southeast Asia.

As you know, we have planned in our fiscal year 1966 and prior year budgets a substantial buildup of war consumable stocks, particularly modern ordnance and ammunition. If we are to fulfill these plans, we must replace what we are drawing from these stocks for consumption in southeast Asia. Furthermore we must provide replacements for the aircraft being lost there in combat. And finally, we must buy some additional helicopters for the new Army and Marine Corps aviation units which we now plan to activate.

The higher activity rates planned for our forces in southeast Asia will increase considerably the consumption of spares and repair parts for many types of equipment. Stocks of these items must be restored through increased production. We will also need to replace in our inventories the additional quantities of equipment for the new bases being established or expanded in southeast Asia. Funds for these purposes are included in the \$1.7 billion supplemental.

Finally, the increased deployments of U.S. forces to southeast Asia will require an extensive program of construction in South Vietnam and along the lines of communication back to the United States. Included in this program are airfields, ports and troop support and logistics facilities.

SUMMARY

Last Wednesday in his statement on Vietnam, President Johnson said:

"I have asked the Commanding General, General Westmoreland, what he needs to meet this mounting aggression. He has told me. We will meet his needs."

The program I have outlined here today and the \$1.7 billion amendment to the fiscal year 1966 Defense appropriation bill now before the committee will, in the collective judgment of my principal military and civilian advisers and myself provide the men, materiel, and facilities required to fulfill this pledge, while at the same time maintaining the forces required to meet commitments elsewhere in the world. I earnestly solicit the full support of this committee and the Congress for this program and budget request.

Summary by program of proposed personnel increases

1. Increase in Army forces:	
(a) 1 division force	
(b) 3 brigade forces	
(c) Aviation companies	
(d) Combat service support	
(e) STRAF support forces	
(f) Expand training	
(g) Transients and other support	
Total, Army	235, 000
2. Augmentation of the three Marine Corps division/aircraft wings:	
(a) Bring units to be deployed in Vietnam up to full strength	
(b) Activate new units to augment the forces to be deployed	
(c) Expand training	
(d) Provide increased pipeline	
Total, Marine Corps	30, 000
3. Strengthening the naval forces:	
(a) Retain ships	
(b) Activate ships	
(c) Increase manning for deployed ships and bases in southeast Asia	
(d) Other support (pipeline, Marine Corps, etc.)	
Total, Navy	35, 000
4. Augmentation of the Air Force strike and airlift capabilities:	
(a) B-52 aircraft deployed to Guam	
(b) Tactical fighter and troop carrier squadrons deployed to southeast Asia	
(c) Retain 1 reconnaissance squadron scheduled to be phased out in fiscal year 1966	
(d) Raise airlift aircraft utilization rates:	
MATS	
PAC-TAC	
(e) Expand training	
(f) Other support (logistical base)	
Total, Air Force	40, 000
5. Increased readiness for the Reserve components:	
Army:	
(a) 3 division forces	(1)
(b) 6 brigade forces	(1)
Marine Corps:	
(c) 4th Division/aircraft wing	2, 500
Air Force:	
(d) 9 F-100 squadrons	1, 667
(e) 4 RF-84 squadrons	697
(f) 11 C-124 squadrons	2, 205
Total, Air Force	4, 569
6. Recapitulation of personnel increases:	
(a) Active duty military personnel:	
Army	235, 000
Navy	35, 000
Marine Corps	30, 000
Air Force	40, 000
Total	340, 000
(b) Reserve component paid drill spaces:	
Army	(1)
Marine Corps	2, 500
Air Force	4, 569
Total	(1)
(c) Direct hire civilian personnel, total	35, 762

¹ Army numbers still to be determined.

STATEMENT OF SECRETARY OF DEFENSE ROBERT S. McNAMARA

(Before a joint session of the Senate Armed Services Committee and the Senate Subcommittee on Department of Defense Appropriations, fiscal year 1966 supplemental for southeast Asia, January 20, 1966)

Mr. Chairman and members of the committee, when I appeared before this committee last August with the amendment to the fiscal year 1966 Defense budget, I described to you the actions we were taking to carry out the President's decision to deploy a force of 125,000 U.S. military personnel to South Vietnam and to be prepared to deploy still more forces if that should become necessary. I noted at the time that if we were to maintain our capabilities to deal with crises elsewhere in the world, these deployments would require some increases in forces, personnel, operating rates, production rates, and construction of facilities above the levels provided in our original fiscal year 1966 budget.

Because we had not had time to work out detailed personnel plans and to calculate on a phased basis the increases in activity rates, the movements of troops and materiel, and the other operation and maintenance costs associated with the buildup in southeast Asia, we proposed to finance the additional military personnel and O. & M. costs under section 612 of the fiscal year 1966 Defense Appropriation Act. Similarly, because we had not had time to develop detailed estimates of production and construction plans for the additional materiel and facilities required, we proposed, and the Congress appropriated, an additional \$1.7 billion in a separate account, "Emergency fund, southeast Asia". This appropriation was intended to provide for the additional financing needed through early 1966 to gear up the production machine, accelerate the delivery of essential items already in production, initiate production of new items required for the support of our forces in southeast Asia, and construct the most urgently needed facilities.

I said at the time that when we appeared here this January we would have a much more precise estimate of the additional requirements and our financial needs for the balance of fiscal year 1966. These estimates are now available, and total \$12,345,719,000 in new obligational authority.

INCLUSION OF CERTAIN MILITARY ASSISTANCE SUPPORT IN THE DEFENSE BUDGET

Included in our supplemental request for fiscal year 1966 is about \$200 million for the support of South Vietnam's Armed Forces and other free world military assistance forces engaged in that country. These requirements have heretofore been financed in the military assistance program. However, now that large U.S. and other free world military assistance forces (e.g., Korean) have joined in the

defense of South Vietnam, the maintenance of separate financial and logistic systems for U.S. and military assistance forces is proving to be entirely too cumbersome, time-consuming, and inefficient. The same problem was encountered at the outset of the Korean war. It was solved, then, by programing, budgeting, and funding for all requirements under the "military functions" appropriations and providing a consolidated financial and supply system for the support of United States, Korean, and other friendly forces engaged in that effort. This arrangement gave the field commanders maximum flexibility in the allocation of available resources and improved the support of the forces employed. We are proposing essentially the same solution for the problems now being encountered in South Vietnam.

Under the proposed arrangement, all unexpended balances of fiscal year 1966 and prior year military assistance funds for South Vietnam would be transferred to and merged with the accounts of the military departments; and all additional funds required for the support of the forces of South Vietnam and other free world military assistance forces in that country would be authorized for and appropriated to the accounts of the military departments. The remainder of the military assistance program would be legislated separately.

IMPLEMENTATION OF THE AUGUST 1965 FORCE AUGMENTATIONS

Since my appearance here last August, our requirements in support of the military effort in Vietnam have continued to grow. We have already deployed a total of about 190,000 U.S. military personnel to South Vietnam, excluding the elements of the 7th Fleet now operating off the coast of Vietnam. And we must be prepared to deploy even more forces if the Communists choose to expand their operations in South Vietnam.

The force augmentations approved in August included:

For the Army: An increase of one division force, three brigade forces, and a large number of aviation companies.

For the Marine Corps: An increase of two helicopter training squadrons, and additional communications, engineer, and military police battalions.

For the Navy: An increase of 25 active ships in the fleet plus four for MSTs, for a total of 29.

For the Air Force: An increase in airlift aircraft utilization rates, from 5 to 8 hours per day for Military Airlift Command (formerly MATS) aircraft, and from 1.5 to 5 hours per day for C-130E's in other commands.

For all the Active Forces: Additional personnel to round out the manning of units to be deployed in Vietnam and for increased training and logistic support.

For the Reserve components: Additional drill pay spaces to raise the manning and readiness levels of three divisions and six brigades and necessary supporting forces in the Army Reserve components, 24 squadrons in the Air Force Reserve components, and the Marine Corps Reserve division/aircraft wing.

An additional 340,000 military and 36,000 direct hire civilian personnel were approved to support these force increases.

FURTHER FORCE AUGMENTATIONS AND RELATED PERSONNEL INCREASES

If we are to be prepared to deploy additional forces to southeast Asia, some further augmentations of our forces and personnel strengths are required. The increases in forces and personnel now proposed are summarized in table 1. The first column shows the personnel increases approved in August 1965 and the second column the increases as revised in January 1966. A number of these changes require some explanation.

In the Army, the major change since last August is in the number of additional military personnel required for the support forces. Inasmuch as it appears desirable to be in position to deploy additional forces without calling up Reserves, these support units must be provided in the Active Force structure. In addition to that change, we have also added another large increment of Army aviation companies to the number approved in August.

The major increase in the Marine Corps over last August is an additional division force, together with a number of tactical helicopter squadrons, observation squadrons and an air support control unit.

In the Navy, we have added to the forces approved in August: 11 LST's and one refrigerator stores ship for logistic support, more SWIFT boats and a mother ship to augment our coastal patrol activities, a number of river control boats and yard craft, and one destroyer. We have also augmented the Navy construction battalions in the Pacific area and are adding four new construction battalions to the Navy structure.

The increases in the Air Force are related to the retention of B-57 and F-102 aircraft previously scheduled to be phased out, a major expansion in the rotation and training base and the logistic support required for the forces in Vietnam.

As shown on the bottom of table 1, a total of about 510,000 military personnel will be required to man the additional forces and support the increased training, rotation, and logistic base. Other adjustments in forces and activities will add another 17,000, but our decision to substitute some 58,000 civilian for 74,000 military personnel spaces will reduce the net increase over the original end fiscal year 1966 military personnel strength to about 453,000, some 113,000 more than the increase approved last August.

When I appeared before this committee last August, we had not as yet determined the number of additional drill pay spaces needed in the Army Reserve components to raise the manning of three division and six brigade forces to 100 percent, or how these spaces should be made available. The number of additional spaces required for this purpose is now estimated at 30,000—18,500 in the Army National Guard and 11,500 in the Army Reserve. The additional spaces needed in the Army Reserve have been provided by a redistribution from units for which there is no requirement in our plans. The 18,500 spaces needed for that purpose in the Army National Guard, plus 20,000 spaces needed to man other Guard units at their authorized strengths, have been added to the 380,000 spaces provided for in the fiscal year 1966 Defense Appropriation Act.

With regard to civilian personnel, the major part of the increase over the number approved last August is related to the substitution of civilian for military personnel, as shown in table 1.

Table 2 provides a recapitulation of the proposed personnel increases, including those related to southeast Asia. The second column shows the additional personnel required for the support of the southeast Asia effort over and above the numbers provided in the original fiscal year 1966 budget as shown in column 1. The third column shows the adjustments resulting from the substitution of civilians for military personnel. The fourth column shows other adjustments (pluses and minuses) related to productivity savings, nonsoutheast Asia related force changes, etc. The fifth column shows the net additions to the original end fiscal year 1966 strengths. The next column shows the number scheduled to be on hand at end fiscal year 1966 and the last column the balance to be added thereafter.

ADDITIONAL FISCAL YEAR 1966 REQUIREMENTS FOR PROCUREMENT, R.D.T. & E. AND CONSTRUCTION

Table 3 shows the additional funds required for the balance of the current fiscal year for procurement, for research, development, test, and evaluation, and for military construction in support of our combat operations in southeast Asia. Of the \$1.7 billion added to the fiscal year 1966 budget last August, about \$1,534 million was applied to procurement, particularly for long leadtime components, new production equipment, tooling, and all the actions necessary to accelerate production rates—but not actually to finance these higher production rates beyond about February 1966. That is the purpose of the additional \$7 billion which we are now requesting for procurement in this fiscal year 1966 supplemental for southeast Asia.

The balance of the \$1.7 billion added to the fiscal year 1966 Defense budget last August, about \$166 million, was used to finance (through February 1966) the most urgent construction projects needed for the support of our military operations in southeast Asia. The additional \$1,238 million included in the supplemental will complete the financing of the fiscal year 1966 increment of that construction program.

In preparing the estimates of our financial requirements for the balance of fiscal year 1966, we have assumed, for budgeting purposes, that combat operations will continue through the end of June 1967; thus the entire requirement for the longer leadtime items through that date is included in this supplemental.

AMMUNITION

As shown on table 3, about \$2.1 billion is included in the fiscal year 1966 supplemental for ammunition which, together with the approximately \$1.1 billion included in the original fiscal year 1966 budget and \$800 million from the August amendment, gives us a total of about \$4.1 billion for fiscal year 1966. This is, admittedly, a very high figure; but our operational plans call for a massive application of firepower to enhance the effectiveness of our forces and reduce casualties.

We estimate that our ground forces (including associated helicopter units) are now consuming ammunition at the rate of about \$100

million per month, and we are budgeting for a consumption rate considerably higher. It is important to note that whereas in 1964 we had no artillery in Vietnam, we now have a substantial number of artillery battalions there. In 1964, the U.S. Army and Marine Corps flew an average of 19,000 helicopter sorties per month; by the middle of last year they were flying about 60,000 sorties per month and at the end of the year, about 125,000. This intensive use of helicopters greatly increases our mobility, making it possible to operate with a much smaller central reserve and to conduct offensive operations without prolonged depletion of our forces in areas already under our control. Many of these helicopters are armed and provide a highly mobile source of firepower.

With regard to air munitions, we are now consuming at a rate of about \$110 million per month; and we are preparing to support a much higher rate. For example, in March 1965 we flew 800 attack (ordnance consuming) sorties in order to stem the flow of war materiel and personnel into South Vietnam. By June of last year, the number of these sorties had increased to 2,800 and by December to over 5,000. The number of attack sorties flown by fixed-wing tactical aircraft against targets in South Vietnam has increased from a monthly average of 1,200 in 1964 to 7,200 in June 1965 and almost 13,000 in December 1965. In addition, we have been flying approximately 300 B-52 sorties, consuming about 6,000 tons of bombs per month since July 1965. Overall, we consumed about 25,000 tons of aircraft-delivered munitions in July 1965 and more than 40,000 tons in December of that year, or at an annual rate of 480,000 tons; and this supplemental will support a considerably higher rate.

AIRCRAFT

Although the aircraft loss rate continues low, the rapidly increasing number of sorties is resulting in larger total losses. In 1964, we lost 38 fixed-wing aircraft and 24 helicopters to hostile action. In 1965, with both the very large increase in activity and the attacks against North Vietnam, we lost 275 fixed-wing aircraft and 76 helicopters. We anticipate that 1966 losses will be somewhat higher. A total of about \$1.8 billion for the replacement of aircraft losses is included in the fiscal year 1966 supplemental. Another \$168 million is included for the Army to equip new aviation units.

The considerably higher rates of utilization of many types of aircraft in all the services will also increase the consumption of spares. For example, Air Force tactical aircraft in Vietnam are now flying 60 percent more hours per month than they normally do in peacetime. And you may recall that I mentioned last August, we were increasing the utilization rate of Military Airlift Command aircraft also by about 60 percent. Accordingly, we have included in the fiscal year 1966 supplemental about \$1.2 billion for aircraft spares and other aircraft equipment for all the services.

OTHER MATERIEL

The additional funds requested for vehicles, electronics, and communications, and other procurements are mostly to equip new units, notably the additional Army and Marine Corps divisions, and for

logistic and training support as well as to equip the new facilities being built in southeast Asia.

INCREASES IN PRODUCTION RATES

To support these higher rates of consumption and combat attrition, rebuild inventories and provide for the additional forces, we have greatly increased production rates and started new production lines. Planned production rates of the principal types of helicopters used in Vietnam have been just about tripled and certain fixed-wing types just about doubled. Production rates of the principal munition items have been increased many fold and major increases have been made in the production of tropical uniforms and jungle boots.

RESEARCH, DEVELOPMENT, TEST, AND EVALUATION

The \$152 million included in the fiscal year 1966 supplemental for R.D.T. & E. is to accelerate certain development projects of particular interest to our operations in southeast Asia. You may recall that one of the items included in our first set of amendments to the fiscal year 1962 budget was the sum of \$122 million for research and development of nonnuclear weapons and equipment specifically designed for limited wars and counterinsurgency operations. Since that time, we have vigorously pursued our efforts in that area and many of the new weapons, equipment and techniques now being employed in Vietnam came out of this work, e.g., the armed helicopter, jungle communications equipment, battlefield radars, defoliation agents, emergency airfield equipment, lightweight body armor, minigun armed aircraft, ammunition for M-79 grenade launchers, jungle boots, etc.

Many other items of this type are now well along in development. In order to make them available for use in Vietnam at the earliest possible time, we have undertaken a new effort called Project Provost (priority research and development objectives for Vietnam operations support), designed to identify those current R. & D. projects which could make a significant contribution to our military operations in Vietnam, and which, with additional funds, could be brought to fruition relatively quickly. So far the military departments have identified over 150 items of this type, and we have already utilized about \$58 million from the fiscal year 1966 R. & D. emergency fund for their support. We are now requesting an additional \$152 million for fiscal year 1966 to continue and expand this effort and to meet other urgent requirements. Among the items to be supported with these additional funds are the development of a therapeutic drug for *fulciparum* malaria and a wide variety of surveillance devices, weapons, munitions, and personal equipment.

MILITARY CONSTRUCTION

As shown on table 3, the bulk of the \$1.2 billion requested for military construction is for facilities in southeast Asia. The balance is for a variety of supporting facilities along the lines of communication back to the United States, and, to a small extent, for training and troop facilities within the United States. The \$1,238 million requested in this supplemental, together with the \$166 million provided by the

August amendment, will make a total of \$1,404 million available for construction in support of southeast Asia in fiscal year 1966, \$355 million more than the entire appropriation for military construction in fiscal year 1965.

The explanation for this large request lies in the nature of the military operation we have undertaken in southeast Asia. South Vietnam itself is primarily an agricultural country; the only major port is Saigon. The deployment of large U.S. military forces, and other friendly forces such as the Korean division, in a country of this sort requires the construction of new ports, warehouse facilities, access roads, improvements to highways leading to the interior of the country and along the coasts, troop facilities, hospitals, completely new airfields and major improvements to existing airfields, communications facilities, etc. We will be prepared to house and support additional units if their deployment should be required in the future. Since construction is a long leadtime activity, the great bulk of this requirement has to be financed in the fiscal year 1966 supplemental. In order to provide some flexibility in the utilization of these funds, we are requesting that \$200 million of the \$1,238 million total program be appropriated to "Military construction, Defense agencies," for later transfer to the military departments as required.

Although I cannot assure you that the funds requested in this supplemental will complete our construction program in southeast Asia, since we do not know how the conflict there may evolve, I can tell you that the amount included in the fiscal year 1967 budget for military construction is very much smaller.

FINANCIAL REQUIREMENTS

Table 4 summarizes our financial requirements for the current fiscal year. The first column shows the amounts thus far enacted, less the \$1.7 billion amendment which is shown in the second column. The third column shows the net additional amounts required in fiscal year 1966 to defray the costs of the pay raises enacted last year. The fourth column is the supplemental for southeast Asia which I have discussed, and the fifth column shows the total, \$63,308,175,000 in new obligational authority, which would be available for the current fiscal year if the military and civilian pay supplemental and the southeast Asia supplemental are enacted as requested.

I should point out that we have included in the southeast Asia supplemental for the military personnel accounts of the Active Forces a total of \$440 million which, last January, we had planned on obtaining by transfer from the working capital funds of the Department of Defense in lieu of new appropriations. You may recall that the total amount planned for transfer last January was \$470 million—\$30 million from the cash balances of the Army Industrial Fund and \$440 million from the cash balances of the Army, Navy, Marine Corps, Air Force, and Defense Stock Funds. Because of the expansion of the forces and the higher rates of activity, the stock funds have had to increase their inventory levels, thus decreasing their balances to a point where no excess cash is available for transfer to the military personnel accounts. Indeed, we are proposing a new general provision which would relieve the stock funds of the present requirement that their cash balances must be at least equal to the amount of

accounts payable at all times. They would, of course, continue to retain sufficient cash to meet their day to day disbursement needs. In addition, this general provision would also permit transfer between such funds in such amounts as may be determined by the Secretary of Defense with the approval of the Bureau of the Budget.

The \$30 million from the Army Industrial Fund is still available and will be transferred, as planned, to the "Military personnel, Army," account in fiscal year 1966. Accordingly, we are requesting the appropriation of only \$440 million to replace the balances which were to have been transferred from the stock fund.

As shown on table 4, \$1,620 million has been included in this supplemental for military personnel, of which \$64 million is for the Reserve components to raise the manning of the selected forces. About \$2,316 million will be required for operations and maintenance, including the additional funds needed by the Reserve components for the support of the additional personnel and the higher readiness levels. I have already discussed the amounts required for procurement, R.D.T. & E., and military construction.

ADDITIONAL AUTHORIZATIONS

The additional amounts requested to be authorized for aircraft, missiles, naval vessels and tracked combat vehicles, and R.D.T. & E., are shown in tables 5 through 7. The additional military construction authorizations are identical to the amounts requested for appropriation, as shown on table 3.

* * *

The President, in his state of the Union address to the Congress on January 13, discussed the reasons for our greater military involvement in southeast Asia and the resulting increases in Defense expenditures. I have attempted in this statement to outline the purposes for which the additional funds requested in this supplemental are required. I can assure you that my associates in the Defense Department and I have reviewed this supplemental with great care, and we now stand ready to help you in every way we can to facilitate the passage of the necessary legislation.

TABLE 1.—Summary of force and personnel increases related to southeast Asia

	Approved August 1965	Revised January 1966
1. Increase in Army Forces:		
(a) Division and initial support forces.....		
(b) 3 brigades and initial support forces.....		
(c) Aviation companies.....		
(d) Sustaining support for 1 division, 3 brigades, and other forces.....		
(e) STRAF support forces.....		
(f) Expand training base and pipeline.....		
Total, Army.....	235,000	306,657
2. Increase in Marine Forces:		
(a) 1 division.....		
(b) Activate forces to be deployed to Vietnam.....		
(c) Bring units to be deployed to full strength.....		
(d) Expand training and support base.....		
(e) Provide increased pipeline.....		
Total, Marine Corps.....	30,000	85,169
3. Increase in Naval Forces:		
(a) Retain ships.....		
(b) Activate or procure ships.....		
(c) Increase manning for deployed ships and bases in southeast Asia.....		
(d) Augment coastal and river patrol.....		
(e) Augment construction forces.....		
(f) Support of Marine forces.....		
(g) Flight training.....		
Total, Navy.....	35,000	55,450
4. Increase in Air Forces:		
(a) B-52 aircraft deployed to Guam.....		
(b) Tactical fighter and troop carrier squadrons deployed to SEA and their CONUS rotation base.....		
(c) Raise airlift aircraft utilization rates.....		
(d) Expand training.....		
(e) Other support (including logistical base).....		
Total, Air Force.....	40,000	63,245
Total Active Force, military.....	340,000	510,521
Adjustment for substitution of civilians.....		-74,300
Other adjustments.....		+16,622
Net increase.....	340,000	452,843
5. Increased readiness for Reserve components:		
Army:		
(a) To raise 3 division and 6 brigade forces to 100 percent manning.....	(1)	² 18,500
(b) To man other ANG units at their authorized strengths.....		20,000
Total, Army.....		³ 38,500
Marine Corps:		
(c) Reserve division/wing team.....	2,500	2,500
Air Force:		
(d) 9 F-100 squadrons.....	1,667	1,667
(e) 4 RF-34 squadrons.....	697	697
(f) 1 Tactical control group.....		436
(g) 11 C-124 squadrons.....	2,205	2,205
Total, Air Force.....	4,569	5,005
6. Increase in direct hire civilian personnel:		
(a) Army.....	11,600	31,133
(b) Navy (including Marine Corps).....	15,500	21,400
(c) Air Force.....	7,300	18,355
(d) Defense agencies.....	1,362	4,893
Total personnel.....	35,762	75,781
Adjustment for substitution of civilians.....		+58,000
Other adjustments.....		-4,564
Net Increase.....	35,762	129,227

¹ Was to be determined.

² The remaining 11,500 personnel required to raise the manning of the selected Reserve Force to 100 percent is being provided by redistribution from units for which there is no requirement in the contingency plans.

³ Represents increase over the end fiscal year 1966 Army National Guard drill pay strength of 380,000 provided for in the fiscal year 1966 Appropriation Act.

TABLE 2.—*Recapitulation of military and civilian personnel authorizations*

	Budgeted strength as of June 30, 1966 per original budget	Increases proposed as of August 1965 and January 1966	Adjustment for substitution of civilians	Other adjustments	Net increase proposed	Strength increase to be realized	
						By June 30, 1966	After June 30, 1966
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Active duty military personnel:							
Army.....	953,094	306,657	-36,500	+10,432	280,599	205,949	74,650
Navy.....	684,848	55,450	-15,000	+2,575	43,025	38,875	4,150
Marine Corps.....	193,190	85,169	-2,800	+2,625	84,994	56,889	28,105
Air Force.....	809,134	63,245	-20,000	+980	44,225	45,364	¹ -1,139
Total.....	2,640,266	510,521	-74,300	+16,622	452,843	347,077	105,766
Direct hire civilian personnel:							
Army.....	317,152	31,133	+26,585	-16,947	40,771	42,480	¹ -1,709
Navy (including USMC).....	320,125	21,409	+14,415	+6,953	42,768	37,476	5,292
Air Force.....	286,099	18,355	+17,000	-12,737	22,618	15,279	7,339
Defense agencies.....	40,778	4,893		+18,177	23,070	27,727	¹ -4,657
Total.....	964,154	75,781	² +58,000	-4,554	129,227	122,962	6,265

¹ Denotes a small decrease in strength after end of fiscal year 1966.² Excludes 2,509 additional indirect hire civilians, bringing the total to 60,500.TABLE 3.—*Fiscal year 1966 supplemental for procurement, R.D.T. & E. and military construction related to southeast Asia (new obligational authority)*

(In millions of dollars)

	Army	Navy	Marine Corps	Air Force	Defense agencies	Total
Procurement:						
Ammunition consumption.....	671	366	338	758	-----	2,133
Aircraft:						
Attrition.....	409	562	(¹)	837	-----	1,799
Equipment of new units.....	168	-----	(¹)	-----	-----	168
Spares.....	221	149	(¹)	555	-----	925
Other aircraft equipment.....	37	27	(¹)	194	-----	258
Total aircraft.....	826	738	(¹)	1,586	-----	3,150
Vehicles.....	329	39	71	66	-----	505
Electronics and communications.....	241	45	42	76	-----	404
Other.....	398	184	66	179	-----	827
Total procurement.....	2,465	1,372	517	2,665	-----	7,019
R.D.T. & E.....	28	53	(¹)	71	-----	152
Military construction:						
South Vietnam.....	408	207	(¹)	110	-----	725
Other locations.....	172	83	(¹)	198	-----	453
Planning.....	30	15	(¹)	16	-----	61
Total program.....	610	305	(¹)	324	-----	1,238
To be appropriated to military department.....	510	255	(¹)	274	-----	1,038
To be appropriated to defense agencies.....	-----	-----	-----	-----	200	200
Total appropriation.....	510	255	(¹)	274	200	1,238

¹ Included in the Navy.

NOTE.—Detail may not add to totals due to rounding.

TABLE 4.—*Financial summary of fiscal year 1966 budget including the proposed supplemental for southeast Asia*

[In thousands of dollars]

	NOA enacted excluding amendment	\$1.700 million amend- ment	Military and civilian pay sup- plemental	SEA supple- mental	Total NOA
Military personnel:					
Army.....	4,092,291		222,100	833,600	5,147,991
Navy.....	3,055,000		182,600	318,500	3,556,100
Marine Corps.....	749,900		42,400	184,600	976,900
Air Force.....	4,393,800		227,600	219,300	4,840,700
National Guard personnel, Army.....	271,800		4,500	45,900	322,200
Reserve personnel, Army.....	238,600			7,500	246,100
National Guard personnel, Air Force.....	71,300		3,500	5,700	80,500
Reserve personnel, Navy.....	105,100		4,600		109,700
Reserve personnel, Marine Corps.....	33,000		1,600	2,200	36,800
Reserve personnel, Air Force.....	60,500		1,200	2,700	64,400
Retired pay, Defense.....	1,529,000		71,000		1,600,000
Total military personnel.....	14,600,291		761,100	1,620,000	16,981,391
Operation and maintenance:					
Army.....	3,434,067		33,400	1,077,200	4,544,667
Navy.....	3,292,137		23,000	506,000	3,821,137
Marine Corps.....	192,101		1,054	102,600	295,755
Air Force.....	4,403,737		27,600	544,900	4,976,237
Defense agencies.....	683,680		14,356	41,769	739,805
Army National Guard.....	208,796		2,000	35,700	246,496
Air National Guard.....	238,000		1,000	3,100	247,100
National Board for Promotion of Rifle Practice, Army.....	459				459
Claims, Defense.....	24,000				24,000
Contingencies, Defense.....	15,000				15,000
Court of Military Appeals, Defense.....	579		11		590
Total operation and maintenance.....	12,492,556		102,421	2,316,269	14,911,246
Procurement:					
Equipment and missiles, Army.....	1,204,800	504,500		2,465,090	4,174,300
Aircraft and missiles, Navy.....	2,220,387	190,200		764,500	3,175,087
Shipbuilding and conversion, Navy.....	1,590,500				1,590,500
Other procurement, Navy.....	1,135,000	167,090		607,500	1,909,590
Procurement, Marine Corps.....	43,800	149,100		516,600	709,500
Aircraft procurement, Air Force.....	3,516,700	158,800		1,585,700	5,261,200
Missile procurement, Air Force.....	771,900	4,000		63,700	839,600
Other procurement, Air Force.....	829,109	360,600		1,016,400	2,206,100
Defense agencies.....	15,200				15,200
Total procurement.....	11,327,387	1,534,290		7,019,400	19,881,077
Research, development, testing, and evaluation:					
Army.....	1,433,988			27,995	1,461,983
Navy.....	1,513,130			52,570	1,565,700
Air Force.....	3,181,956			71,085	3,253,041
Defense agencies.....	491,300				491,300
Emergency fund, Defense.....	19,426				19,426
Total, R.D.T. & E.....	6,639,800			151,650	6,791,450
Military construction:					
Army.....	346,843	64,600		509,700	921,143
Navy.....	329,405	43,210		254,600	627,215
Air Force.....	361,773	57,900		274,100	693,773
Defense agencies.....	19,768			200,000	219,768
Army Reserve.....	9,500				9,500
Naval Reserve.....	4,000				4,000
Air Force Reserve.....	10,000				10,000
Army National Guard.....	10,000				10,000
Air National Guard.....	5,000				5,000
Loran stations, Defense.....					
Total, military construction.....	1,096,289	165,710		1,238,400	2,500,399
Family housing, Defense.....	665,846				665,846
Civil defense:					
Operation and management, civil defense.....	64,066				64,066
Research, shelter survey and marking, civil defense.....	42,700				42,700
Total, civil defense.....	106,766				106,766
Total, military functions.....	46,928,935	1,700,000	863,521	12,345,719	61,838,175

TABLE 4.—*Financial summary of fiscal year 1966 budget including the proposed supplemental for southeast Asia—Continued*

[In thousands of dollars]

	NOA enacted excluding amendment	\$1,700 million amend- ment	Military and civilian pay sup- plemental	SEA supple- mental	Total NOA
Military assistance: Executive.....	1,470,000	-----	-----	-----	1,470,000
Total, Department of Defense.....	48,398,935	1,700,000	863,521	12,345,719	63,308,175
Recapitulation:					
Army.....	11,241,644	569,100	262,000	5,002,595	17,075,339
Navy.....	14,268,960	549,600	255,254	3,309,670	18,383,484
Air Force.....	17,842,766	581,300	260,900	3,791,685	22,476,651
Defense agencies.....	3,468,799	-----	985,367	241,769	3,795,935
Civil defense.....	106,766	-----	-----	-----	106,766
Military assistance.....	1,470,000	-----	-----	-----	1,470,000
Total.....	48,398,935	1,700,000	863,521	12,345,719	63,308,175

TABLE 5.—*Amounts requested for aircraft, missiles, ships, and tracked combat vehicle procurement authorization in fiscal year 1966 supplemental request*

[In thousands]

	Authorized ¹ fiscal year 1966	Appropriated ¹ fiscal year 1966	Supplemental (NOA) fiscal year 1966
Aircraft:			
Army.....	\$485,400	\$485,400	\$825,600
Navy and Marine Corps.....	2,100,400	2,104,500	738,300
Air Force.....	3,709,000	3,675,800	1,385,700
Missiles:			
Army.....	253,700	277,000	64,000
Navy.....	369,600	358,200	26,200
Marine Corps.....	15,200	15,200	27,500
Air Force.....	800,100	800,100	63,700
Naval vessels: Navy.....	1,721,000	1,590,500	-----
Tracked combat vehicles:			
Army.....	-----	-----	75,800
Marine Corps.....	-----	-----	10,900
Total.....	9,454,400	9,306,700	3,417,700

¹Included amounts totaling \$496,100,000 provided through emergency fund for southeast Asia, Public Law 89-213.

TABLE 6.—*Source of funds for aircraft, missiles, ships, and tracked combat vehicles, fiscal year 1966 supplemental procurement program*

[In thousands]

	Total fiscal year 1966 program	Funding available ¹ for financing program in part	NOA requested for authorization
Aircraft:			
Procurement of equipment and missiles, Army	\$1,333,200	\$507,600	\$825,600
Procurement of aircraft and missiles, Navy (and Marine Corps)	3,224,000	2,485,700	738,300
Aircraft procurement, Air Force	5,596,200	4,010,500	1,585,700
Subtotal, aircraft	10,153,400	7,003,800	3,149,600
Missiles:			
Procurement of equipment and missiles, Army	368,600	304,600	64,000
Procurement of aircraft and missiles, Navy	381,600	355,400	26,200
Procurement, Marine Corps	42,700	15,200	27,500
Missile procurement, Air Force	1,242,800	1,179,100	63,700
Subtotal, missiles	2,035,700	1,854,300	181,400
Naval vessels: Shipbuilding and conversion, Navy	1,930,500	1,930,500	
Track combat vehicles:			
Procurement of equipment and missiles, Army	375,700	299,900	75,800
Procurement, Marine Corps	13,400	2,500	10,900
Subtotal, tracked combat vehicles	339,100	302,400	86,700
Grand total	14,508,700	11,091,000	3,417,700

¹ Includes total amount of \$496,100,000 provided through emergency fund for southeast Asia, Public Law 89-213.

TABLE 7.—*Amounts requested for R.D.T. & E. authorization in fiscal year 1966 supplemental request*

[In thousands]

	Authorized, fiscal year 1966	Appropriated, fiscal year 1966	Supplemental (NOA), fiscal year 1966
Research, development, test, and evaluation:			
Army	\$1,406,400	\$1,406,400	\$27,995
Navy (including the Marine Corps)	1,439,200	1,439,200	52,570
Air Force	3,103,900	3,103,900	71,085
Defense agencies	495,000	495,000	0
Emergency fund	(¹)	125,000	0
Total	6,444,500	6,569,500	151,650

¹ Not available.

DEFENSE BUDGET HIGHLIGHTS*

APPROACH TO THE FISCAL YEARS 1968-72 PROGRAM AND THE FISCAL YEAR 1967-68 BUDGETS

(Editor's Note: This issue of the Defense Industry Bulletin is devoted almost entirely to Secretary of Defense Robert S. McNamara's statement on January 23, 1967, before a joint session of the Senate Armed Services Committee and the Senate Subcommittee on Department of Defense Appropriations on the fiscal years 1968-72 Defense program and the 1968 Defense budget.

While space limitations permit only an abbreviated treatment of the statement, an attempt has been made to excerpt those portions which are of special interest to Defense industry. Using the method established in previous years, paragraph markings have been deleted from the original text for the sake of clarity.

The statement of the Secretary of Defense on the fiscal year 1967 supplemental for southeast Asia will be carried in next month's issue of the Bulletin.)

Last year when I appeared before this committee in support of the fiscal years 1967-71 program and the fiscal year 1967 budget I said:

With regard to the preparation of the fiscal years 1967-71 program and the fiscal year 1966 supplemental and the fiscal year 1967 budget, we have had to make a somewhat arbitrary assumption regarding the duration of the conflict in southeast Asia. Since we have no way of knowing how long it will actually last or how it will evolve, we have budgeted for combat operations through the end of June 1967. This means that if it later appears that the conflict will continue beyond that date, or if it should expand beyond the level assumed in our present plans, we will come back to the Congress with an additional fiscal year 1967 request.

Throughout the spring and summer of last year in my appearances before various congressional committees, I reiterated the fact that the fiscal year 1967 budget was based on the arbitrary assumption that the conflict would end by June 1967, and that additional funds would be required if the conflict continued.

What we were trying to do was to avoid the overfunding which occurred during the Korean war when the Defense Department requested far more funds than were actually needed. For example, the Defense Department requested a total of about \$164 billion for the 3 fiscal years 1951-53; the Congress appropriated a total of \$156 billion; the amount actually expended was \$102 billion; and the unexpended balances rose from \$10.7 billion at the end of fiscal year 1950 to \$62 billion by the end of fiscal year 1953. It took about 5 years to work the unexpended balance down to about \$32 billion; and we were able to support a Defense program of about \$50 billion

*Reprinted from Defense Industry Bulletin, February 1967.

a year during fiscal years 1962-64 with about \$30 billion of unexpended balances.

Although we still have no way of knowing when the conflict will end, it is perfectly clear that we must take whatever measures are necessary to ensure our ability to support our forces in the event the conflict does continue beyond June 30, 1967. Indeed, when it became apparent last summer that this was likely to be the case, we continued the buildup of our military personnel strength beyond the level anticipated in the fiscal year 1967 budget and took action to ensure that deliveries of long lead time items would continue beyond June 30, 1967, without interruption. The Congress was informed of these actions through the reprogramming process and related hearings.

But, while it was clear even last summer that additional funds would be required for fiscal year 1967 if the conflict in southeast Asia were to continue, the timing and the amount of the additional request posed a problem. With regard to timing, we had essentially two alternatives: request an amendment to the fiscal year 1967 budget in the summer of 1966, while it was still before the Congress; or wait until early the following year and request a supplemental appropriation. Each of these alternatives had certain advantages and disadvantages.

The major disadvantage of waiting for a supplemental has been the need to reprogram, on a rather large scale, available fiscal year 1967 funds to meet our most urgent longer lead time procurement requirements, pending the availability of the additional funds. We recognize that this extensive reprogramming has placed an extra burden not only on the Defense Department but on the Armed Services Committees and the Defense Appropriations Subcommittees as well. Some of these reprogramming actions required the prior approval of this and other interested committees; all of them have been reported to the committees concerned. However, in order to facilitate your consideration of the fiscal year 1967 supplemental request we have prepared a recapitulation of all of the major procurement program adjustments affecting that fiscal year, which will be furnished separately.

Now, with a year and a half of combat experience in southeast Asia behind us, I believe that we have a much better understanding of our future requirements. In October 1965, when the fiscal year 1967 budget was being developed, we were in the midst of an explosive buildup in South Vietnam; it was then that we moved over 100,000 men 10,000 miles in less than 120 days. The future was impossible to predict with accuracy. In contrast, in October 1966, at the time of the preparation of the fiscal year 1968 program, we could look ahead to the time when our forces in southeast Asia could be expected to level off.

Since we can now project our requirements for the conflict in southeast Asia with far greater confidence than last year, we have changed our basic approach in preparing the fiscal year 1967 supplemental as well as the fiscal year 1968 budget. Sufficient funds are being requested in both the fiscal year 1967 supplemental and the fiscal year 1968 budget to protect the production lead time on all combat essential items until fiscal year 1969 funds would become available. Thus, if it later appears that the conflict will continue beyond June 30, 1968, we would be able to use fiscal year 1969 funds to order additional

ammunition for delivery after December 1968 and keep the production lines going without interruption.

In the case of tactical aircraft, which have a production lead time on the average of about 18 months, we have included sufficient funds in the fiscal year 1967 supplemental and the regular fiscal year 1968 budget to cover deliveries at rates sufficient to offset combat attrition in southeast Asia to January 1, 1970. If it later appears that all of such aircraft will not be required to replace combat attrition, the production of some might be cancelled and some used to modernize the forces at a faster rate than presently planned.

Similar provisions have been made in the fiscal year 1967 supplemental and the fiscal year 1968 budget for other categories of material which would be affected by the continuation of combat operations in southeast Asia beyond June 1968. Accordingly, barring a significant change in the character or scope of the southeast Asia conflict, or unforeseen emergencies elsewhere in the world, the fiscal year 1967 supplemental and fiscal year 1968 budget should be sufficient to cover our requirements until fiscal year 1969 funds become available, even if the conflict continues beyond June 30, 1968.

Because of the large demands of the southeast Asia conflict, I have deleted from both the fiscal year 1967 supplemental and the fiscal year 1968 budget, procurement funds which are required simply for the replacement of items already in the inventory with later models, except for tactical aircraft and helicopters and where the newer item is being procured to replace consumption. This type of marginal modernization can be safely deferred to a later time.

With regard to military construction, we have included funds in the fiscal year 1968 budget for military family housing and other categories of "noncombat" facilities, e.g., replacement of old barracks, BOQ's, maintenance shops, administration and school buildings, etc. We deferred these types of construction programs in fiscal year 1966 and 1967 in order to reduce our demand on an economy already laboring under inflationary pressures. Now that these pressures appear to be subsiding, we should be prepared to assume the orderly modernization and expansion of our physical plant, which represents an investment, in terms of acquisition cost, of well over \$35 billion. The rate at which we do so will depend upon economic developments during the next 12 to 18 months. In any event, we would first release the balance of the fiscal year 1966 military construction program (about \$565 million), and then move forward with the fiscal year 1968 program, for which a total of \$2,123 million has been included for military construction and \$267 million for the construction of military family housing.

Needless to say, we are continuing our cost reduction efforts with undiminished vigor. And, as you know, we have developed another list of base closings and consolidations, none of which will in any way affect our combat capabilities in southeast Asia or elsewhere.

By eliminating unneeded and marginal activities and deferring whatever can be safely deferred, I have been able to reduce the fiscal year 1967 supplemental and the fiscal year 1968 budget requests of the services and Defense agencies by about \$23.3 billion, while at the same time providing for all essential military requirements. We are requesting for fiscal year 1967 a total of \$72.8 billion in new obligatory authority, of which \$12.3 billion is in the special supplemental

for southeast Asia. For fiscal year 1968 we are requesting a total of \$75.3 billion in new obligational authority. Expenditures are now estimated at \$67.95 billion for fiscal year 1967 (\$9.65 billion above the original budget estimate) and \$73.1 billion for fiscal year 1968.

IMPACT OF THE DEFENSE PROGRAM ON THE BALANCE OF PAYMENTS

During the past year the progress that the United States has been making in its efforts to eliminate the troublesome deficit in its international balances of payments was arrested. By 1965, the overall "liquidity" deficit was slightly over \$1.3 billion, down substantially from the \$2.8 billion level of the previous year, and we were hoping for a further improvement in 1966. However, we now expect that when final data are available for that year, they will show that on a liquidity basis the deficit was roughly the same as the year before. The chief factors in this development were some deterioration on the trade accounts stemming from the rapid domestic economic expansion during the period and higher Defense expenditures abroad.

As you know, for many years the Department of Defense has been making a vigorous effort to reduce the net impact of its program on the U.S. balance of payments while still maintaining all necessary combat capabilities and avoiding undue hardships for the individual serviceman or his dependents. Figure 1 summarizes the results of this effort over the fiscal year 1961-66 period.

FIGURE 1

[In billions]

	Fiscal year—					
	1961	1962	1963	1964	1965	1966
Expenditures:						
U.S. forces and their support (excluding increase in SEA expenditures over fiscal year 1961).....	\$2.5	\$2.4	\$2.4	\$2.5	\$2.3	\$2.4
Military assistance.....	.3	.2	.3	.2	.2	.2
Other (AEC, etc.).....	.3	.3	.3	.1	.1	.1
Total.....	3.1	3.0	3.0	2.8	2.6	2.6
Receipts.....	-3	-9	-1.4	-1.2	-1.3	-1.2
Net adverse balance (excluding increase in SEA expenditures over fiscal year 1961).....	2.8	2.1	1.6	1.6	1.2	1.4
Increase in SEA expenditures over fiscal year 1961.....			.1	.1	.2	.7
Net adverse balance.....	2.8	2.1	1.7	1.7	1.4	2.1

As you can see, between fiscal year 1961 and fiscal year 1965 we succeeded in reducing the net adverse balance on the "Defense" account by half, from \$2.8 billion to \$1.4 billion. This reduction was achieved through a dramatic rise in receipts from sales of U.S. military goods and services to foreign countries, coupled with a successful effort to hold down overseas expenditures in face of substantial increases in foreign prices and wages and in the pay of U.S. Defense Department personnel. For example, in Europe the cost of living went up about 16 percent and wage rates rose more than 30 percent. However, during fiscal year 1966 the requirements of the southeast Asia conflict, together with a modest though, hopefully, temporary decline in military sales receipts, combined to raise the net adverse balance to \$2.1 billion.

The major factor underlying this rise, of course, has been the war in Vietnam. Military expenditures abroad are closely related to the size of our deployments overseas. Between June 1965 and June 1966, the total number of U.S. military personnel in south Vietnam rose from 59,900 to 267,500, an increase of 207,600. In addition, it was necessary to undertake very large construction and logistics efforts in support of operations in southeast Asia, both of which added to the payments deficit. These additional foreign exchange costs were not unexpected (once the dimensions of our commitment there became apparent), and I reported to you a year ago that the conflict might raise such costs several hundred million dollars above prebuildup levels; indeed, we now estimate that there were approximately \$500 million of such additional expenditures in fiscal year 1966.

We recognized this threat to our balance of payments from the beginning and we have taken extraordinary measures to minimize its impact. Nevertheless, we must expect that the higher southeast Asia deployments planned over the next year and a half will inevitably cause our overseas spending to rise still higher in the months ahead. Indeed, it now appears that Vietnam-related foreign exchange costs in fiscal year 1967 will run over \$1 billion higher than the prebuildup year of fiscal year 1965.

In previous years I have described in some detail the Defense Department's actions to limit the balance of payments effects of our overseas programs, including:

The prompt withdrawal of U.S. forces from overseas areas whenever changes in circumstances, our own capabilities, or those of our allies permit such action.

A continuing review of the requirement for and the efficient utilization of overseas installations with a view to eliminating or consolidating these facilities in order to reduce their costs to a minimum.

Acceptance of up to 50 percent cost penalties (in some cases more) in order to favor procurement of U.S.-produced goods and services over those of foreign countries. Through fiscal year 1966, nearly \$300 million of such procurement was diverted to U.S. sources.

The virtual cessation of new offshore procurement for the military Assistance Program. In fiscal year 1966, expenditures for such procurement were less than a third the fiscal year 1963 level.

Efforts to encourage Defense Department personnel to reduce their overseas spending and, conversely, to increase their personal savings.

Sharp curbs on the size of U.S. headquarters staffs abroad and on the number of foreign national employees.

With the escalation of the conflict in southeast Asia, a number of special measures have been added. For example, in the area of personal spending, disbursement procedures were modified to make it easier for a serviceman to leave his pay "on the books" or increase the size of the allotment sent home. A most promising step was the enactment by the Congress last August of the uniform service savings deposit program which authorizes interest rates of up to 10 percent to encourage savings by servicemen overseas. We have initiated a vigorous educational program to complement this new savings oppor-

tunity and the results to date have been most encouraging. Total deposits under this legislation in the first 3 months (September–November 1966) totaled \$23.4 million.

In the construction area, special procedures have been put into effect to minimize the balance of payments costs of our large building program in southeast Asia, again with gratifying results to date. For example, during fiscal year 1966, only about one-fifth of the \$372 million paid our principal contractor in Vietnam entered the balance of payments. The rest in effect was “returned” to the United States to buy American goods and services, including transportation on U.S.-flag vessels. Most important, this was accomplished without impeding in any way the progress of the construction work itself.

With respect to military receipts, the decrease in fiscal year 1966 can be traced almost entirely to the phasing of actual receipts from the Federal Republic of Germany, with whom we have had an agreement to offset U.S. military expenditures in that country. The basic agreement called for the Germans to make payments in fiscal year 1966–67 of \$1,350 million for purchases of U.S. military goods and services required to meet their defense needs.

With regard to our military sales program, I have the impression that our policies and objectives in this area are not very well understood, either at home or overseas. For example, allegations have been made:

That we are forcing unwanted arms on countries.

That we are selling arms to countries which have no legitimate use for them and which could better use their scarce resources to improve the lot of their people.

That by indiscriminately selling arms, we are promoting the arms race and undermining the peace.

That in some cases our military sales efforts are thwarting the objectives of our own economic aid programs.

That our military sales efforts are motivated primarily by balance of payments considerations, abetted by the desire for profits on the part of U.S. manufacturers.

All of these allegations are false and are based on a misunderstanding or lack of knowledge of the facts involved. I believe it would be useful, therefore, to review briefly the background and origin of the present foreign military sales program.

It has been widely recognized in our country, at least since the Korean war, that the collective defense of the free world required armed allies, and somewhat more belatedly, that the internal security of most countries requires some armed forces. Circumstances of history, in particular the greatly weakened economic condition of most countries following World War II, forced on the United States the role of major armament supplier to the free world. Accordingly, during the decade of the 1950's, the United States had to meet the legitimate armament needs of its friends primarily through a large grant aid program. Indeed, of the \$22 billion of U.S. military exports during the 1950's, \$17 billion were financed by Congressional appropriations.

By the latter part of the decade, however, many of these countries had become prosperous again, enabling them to produce more of their own arms or buy them abroad. At the same time, this rising affluence allowed several of these countries to rebuild their monetary reserves.

Also, between fiscal year 1957 and the end of fiscal year 1961, the United States lost about \$5 billion of its gold holdings while its liquid liabilities to foreigners (which represent potential claims on our gold) had risen from about \$15 billion to about \$22 billion.

The increasing prosperity of many of our allies was reflected in our military assistance policies. Grant aid by fiscal year 1961 had already declined from an average annual level of \$2 billion plus during the 1950's to about \$1.5 billion. Since fiscal year 1961, this downward trend has continued with grant aid declining both absolutely and relatively. Whereas in fiscal year 1961, there were two dollars of grant aid for every dollar of military sales to foreign recipients, by fiscal year 1966 the ratio had been reversed. Moreover, I think it is important to note that, in terms of total value, U.S. military exports in the 10-year period, fiscal year 1962-71, are not expected to be measurably higher than in the decade, fiscal year 1952-61; the big change will be in the shift in the way these exports are financed—from grant aid in the 1950's to military sales in the 1960's.

With this shift in emphasis from grant aid to sales, it was decided to organize the latter on a more formal basis within the Department of Defense, indeed, to make it a separate program. The principal objective of this foreign military sales program is, however, basically the same as that of the grant aid program, i.e., to promote the defensive strength of our allies in a way consistent with our overall foreign policy objectives. Encompassed within this objective are several specific goals:

To further the practice of cooperative logistics and standardization with our allies by integrating our supply systems to the maximum extent feasible and by helping to limit proliferation of different types of equipment.

To reduce the costs, to both our allies and ourselves, of equipping our collective forces, by avoiding unnecessary and costly duplicative development programs and by realizing the economies possible from larger production runs.

To offset, at least partially, the unfavorable payments impact of our deployments abroad in the interest of collective defense. Three basic standards were established to govern the conduct of our foreign military sales program:

We will not sell equipment to a foreign country which we believe it cannot afford or should not have.

We will never ask a potential foreign customer to buy anything not truly needed by its own forces.

We will not ask any foreign country to purchase anything from the United States, which it can buy cheaper or better elsewhere.

These standards are fully consistent with the spirit of the provision added to the Foreign Assistance Act last year, which calls for the sales program to be administered in such a way as to encourage reciprocal arms control and disarmament agreements and discourage arms races.

Over the next 5 years, we estimate that the countries of the non-Communist world will have legitimate requirements for substantial amounts of new military equipment. Based on past experience, we believe that many of these requirements can be most effectively met by purchases from us. However, our ability to realize this potential will depend on one major condition: we must convince our allies that

the U.S. military sales program is not a threat to their long-range national interests. And, as I mentioned previously, we must be willing, as a nation, to make military trade a "two way" street. For our part, the Defense Department will continue to take every opportunity to promote cooperative logistics arrangements—including cooperative research and development efforts—and to emphasize the important contribution which the sales program can make in furthering the objectives of collective defense.

Turning again to our international payments position, for the near term future, the prospects for any reduction in the net adverse balance on the "military" account must rest on an increase in sales receipts, and there are both practical and desirable limits as to how much relief we can or should expect from this source. In Europe, we should be able to make a net reduction in the size of our logistics support establishment in the process of relocating from France, although there will be some initial offsetting costs for the relocation itself. In the Far East, we will face continuing high foreign exchange costs as long as our Vietnam deployments remain large.

Let me assure the committee, however, that despite our preoccupation with the important national security objective we are charged with accomplishing, we remain keenly aware of the burden that our overseas programs place on the Nation's international balance of payments. In this regard, we have no intention of relaxing our efforts to make that burden as light as possible.

STRATEGIC FORCES

In this section of my statement I will discuss the three major programs which, together, constitute the foundation of our general nuclear forces, and civil defense. Because of their close interrelationship and, indeed, their interaction, it is essential that all three of these programs be considered within a single analytical framework.

THE GENERAL NUCLEAR WAR PROBLEM

During the past several years, in my annual appearances before this committee, I have attempted to explore with you some of the more fundamental characteristics of the general nuclear war problem and the kinds of strategic forces which it involves. I noted that our general nuclear war forces should have two basic capabilities:

To deter deliberate nuclear attack upon the United States and its allies by maintaining, continuously, a highly reliable ability to inflict an unacceptable degree of damage upon any single aggressor, or combination of aggressors, at any time during the course of a strategic nuclear exchange, even after absorbing a surprise first strike.

In the event such a war nevertheless occurred, to limit damage to our population and industrial capacity.

The first capability we call "assured destruction" and the second "damage limitation." The strategic offensive forces—the ICBM's, the submarine-launched ballistic missiles (SLBM's), and the manned bombers—which we usually associate with the first capability, can also contribute to the second. They can do so by attacking enemy delivery vehicles on their bases or launch sites, provided they can

reach those vehicles before they are launched at our cities. Conversely, the strategic defensive forces—manned interceptors, anti-bomber surface-to-air missiles, antiballistic missile (ABM)—which we usually associate with the second capability can also contribute to the first. They can do so by successfully intercepting and destroying the enemy's offensive weapons before they reach our strategic offensive forces on their bases and launch sites.

As long as deterrence of a deliberate Soviet (or Red Chinese) nuclear attack upon the United States or its allies is the overriding objective of our strategic forces, the capability for assured destruction must receive the first call on all of our resources and must be provided regardless of the costs and the difficulties involved. Damage limiting programs, no matter how much we spend on them, can never substitute for an assured destruction capability in the deterrent role. It is our ability to destroy an attacker as a viable 20th century nation that provides the deterrent, not our ability to partially limit damage to ourselves.

What kind and amount of destruction we would have to be able to inflict on an attacker to provide this deterrent cannot be answered precisely. However, it seems reasonable to assume that in the case of the Soviet Union, the destruction of, say, one-fifth to one-fourth of its population and one-half to two-thirds of its industrial capacity would mean its elimination as a major power for many years. Such a level of destruction would certainly represent intolerable punishment to any industrialized nation and, thus, should serve as an effective deterrent to the deliberate initiation of a nuclear attack on the United States or its allies.

Assured destruction with regard to Red China presents a somewhat different problem. China is far from being an industrialized nation. However, what industry it has is heavily concentrated in a comparatively few cities. We estimate, for example, that a relatively small number of warheads detonated over 50 Chinese urban centers would destroy half of the urban population (more than 50 million people) and more than one-half of the industrial capacity. Moreover, such an attack would also destroy most of the key governmental, technical and managerial personnel and a large proportion of the skilled workers. Since Red China's capacity to attack the United States with nuclear weapons will be very limited, even during the 1970's, the ability of even a very small portion of our strategic offensive forces to inflict such heavy damage upon them should serve as an effective deterrent to the deliberate initiation of such an attack on their part.

Once sufficient forces have been procured to give us high confidence of achieving our assured destruction objective, we can then consider the kinds and amounts of forces which might be added to reduce damage to our population and industry in the event deterrence fails. But here we must note another important point, namely, the possible interaction of our strategic forces programs with those of the Soviet Union. If the general nuclear war policy of the Soviet Union also has as its objective the deterrence of a U.S. first strike (which I believe to be the case), then we must assume that any attempt on our part to reduce damage to ourselves (to what they would estimate we might consider an "acceptable level") would put pressure on them to strive for an offsetting improvement in their deterrent forces. Conversely, an increase in their damage limiting capability would

require us to make greater investments in assured destruction, which, as I will describe later, is precisely what we now propose to do.

It is this interaction between our strategic forces programs and those of the Soviet Union which leads us to believe that there is a mutuality of interests in limiting the deployment of antiballistic missile defense systems. If our assumption that the Soviets are also striving to achieve an assured destruction capability is correct, and I am convinced that it is, then in all probability all we would accomplish by deploying ABM systems against one another would be to increase greatly our respective defense expenditures, without any gain in real security for either side. It was for this reason that President Johnson decided to initiate negotiations with the Soviet Union, designed, through formal or informal agreement, to limit the deployment of ABM systems, while including at the same time about \$375 million in his fiscal year 1968 budget to provide for such actions—e.g., protection of our offensive weapon systems—as may be required if these discussions prove unsuccessful.

In this connection, it might be useful to reiterate another fundamental point, namely, that the concept of assured destruction implies a "second strike" capability, i.e., a strategic force of such size and sufficient strength to destroy the attacker. Thus if assured destruction is also a Soviet objective, they must always view our strategic offensive forces in their planning as a potential first strike threat (just as we view their forces) and provide for a second strike capability.

THE SIZE AND CHARACTER OF THE THREAT

In order to assess the capabilities of our general nuclear war forces over the next several years, we must take into account the size and character of the strategic forces which the Soviet Union and Red China are likely to have during the same period. Again, let me caution that, while we have reasonable high confidence in our estimates for the close-in period, our estimates for the early part of the next decade are subject to much uncertainty. As I pointed out in past appearances before this committee, such longer range projections are, at best, only informed estimates particularly since they deal in many cases with a period beyond the production and deployment leadtimes of the weapon systems involved.

The Soviet strategic offensive-defensive forces

Two significant changes have occurred during the last year in our projections of Soviet strategic forces. The first is a faster than expected rate of construction of hard ICBM silos; the second is more positive evidence of a deployment of an antiballistic missile defense system around Moscow. (Both of these developments fall considerably short of what we assumed in the "higher than expected" threat, against which we have been hedging for several years.) Our current estimates for other elements of the Soviet strategic forces are generally in line with those I discussed here last year.

Summarized in the following table are the Soviet's strategic offensive forces estimated for October 1, 1966. Shown for comparison are the U.S. forces.

United States versus Soviet intercontinental strategic nuclear forces

	Oct. 1, 1966	
	U.S. ¹	U.S.S.R.
ICBM's ²	934	340
SLBM's (UE launchers) ³	512	130
Total intercontinental ballistic missiles ⁴	1,446	470
Intercontinental bombers ⁵	680	155

¹ These are mid-1966 figures.

² Excludes test range launchers and Soviet MR/IRBM's capable of striking Eurasian targets.

³ In addition to the SLBM's, the Soviets possess submarine-launched cruise missiles whose primary targets are naval and merchant vessels.

⁴ In 1965, intelligence reports estimated Soviet intercontinental missiles as of mid-1966 to number between 430 and 500.

⁵ In addition to the intercontinental bombers shown in the table, the Soviets possess medium bombers capable of striking Eurasian targets.

Intercontinental ballistic missiles. As of now, we have more than three times the number of intercontinental ballistic missiles (i.e., ICBM's, and SLBM's) the Soviets have. Even by the early 1970's, we still expect to have a significant lead over the Soviet Union in terms of numbers and a very substantial superiority in terms of overall combat effectiveness. In this connection, we should bear in mind that it is not the number of missiles which is important, but rather the character of the payloads they carry; the missile is simply the delivery vehicle. Our superiority in intercontinental bombers, both in numbers and combat effectiveness, is even greater and is expected to remain so for as far ahead as we can see. There is still no evidence that the Soviets intend to deploy a new heavy bomber in the late 1960's.

Antiballistic missile defense. We have been aware for many years that the Soviets have been working on an antiballistic missile defense system, just as we have been. After a series of abortive starts, it now appears that the Soviets are deploying such a system (using the "GALOSH" missile, publicly displayed in 1964) around Moscow. They are also deploying another type of defensive system elsewhere in the Soviet Union, but the weight of the evidence at this time suggests that this system is not intended primarily for antiballistic missile defense. However, knowing what we do about past Soviet predilections for defense systems,¹ we must for the time being, plan our forces on the assumption that they will have deployed some sort of an ABM system around their major cities by the early 1970's. Whether made up of GALOSH only, or a combination of GALOSH and other types of missiles, a full scale deployment would cost the Soviet Union at least \$20 to \$25 billion.

The Red Chinese nuclear threat

There has been no basic change in our estimates for the Red Chinese nuclear threat. Their firing of a nuclear armed missile over a distance of a few hundred miles last October falls within the limits of that estimate.

¹ The Soviets for more than a decade have spent substantially more on air defense against strategic bombers than has the United States. But if our Strategic Air Command is correct in its judgment that a very high proportion of the U.S. incoming bombers could penetrate the Soviet defenses and reach their targets, and I have no reason to dispute it, then we must conclude that the bulk of these Soviet expenditures has been wasted.

With regard to an ICBM, we believe that the Red Chinese nuclear weapons and ballistic missile development programs are being pursued with high priority. On the basis of recent evidence, it appears possible that they may conduct either a space or a long-range ballistic missile launching before the end of 1967. However, it appears unlikely that the Chinese could deploy a significant number of operational ICBM's before the mid-1970's, or that those ICBM's would have great reliability, speed of response, or substantial protection against attack.

Red China also has some bombers which could carry nuclear weapons, but most of them have an operational radius of only a few hundred miles. It is highly unlikely, on the basis of cost alone, that they would undertake the development, production, and deployment of a new, long-range bomber force. If they chose to do so, it would take them a decade or more before they could deploy it. Accordingly, we have no reason on this account to change our estimate that a significant Red Chinese nuclear threat to the continental United States will not develop before the mid-1970's.

CAPABILITIES OF THE PROPOSED FORCES FOR ASSURED DESTRUCTION

The most demanding test of our assured destruction capability is the ability of our strategic offensive forces to survive a well coordinated surprise Soviet first strike directed against them. Because no one can know how a general nuclear war between the United States and the Soviet Union might occur, prudence dictates that we design our own strategic forces on the basis of a greater threat than we actually expect.

Capability against the expected threat

Even if the Soviets in the 1972 period were to assign their entire available missile force to attacks on our strategic forces (reserving only refire missile and bomber-delivered weapons for urban targets), more than one-half of the total forces programmed last year for 1972 would still survive and remain effective.

Considering the overall size and character of that force, it is clear that our strategic missiles alone could destroy the Soviet Union as a viable 20th century society, even after absorbing a well coordinated, surprise first attack. Indeed, the detonation of even one-fifth of the total surviving weapons over Soviet cities would kill about 30 percent of the total population (73 million people) and destroy about one-half of the industrial capacity. By doubling the number of warheads delivered, Soviet fatalities and industrial capacity destroyed would be increased by considerably less than one-third. Beyond this point further increments of warheads delivered would not appreciably change the result, because we would have to bring smaller and smaller cities under attack, each requiring one delivered warhead.

Although it is not at all certain that they will do so, we must, as I noted earlier, base our force planning on the assumption that the Soviets will deploy a reasonably effective ABM defense around their principal cities; and we must be prepared to overwhelm it.

We have been hedging against this possibility for some time, and last year we took a number of actions of which the following are the most important:

Accelerated development of the Poseidon missile.

Approved production and deployment of Minuteman III.

Developed penetration aids for Minuteman.

Now in the fiscal year 1968 program we propose to take a number of additional actions to enhance the future capabilities of our assured destruction forces, of which the following are the more important:

Produce and deploy the Poseidon missile.

Produce and deploy improved missile penetration aids.

Increase the proportion of Minuteman III in the planned force and provide it with an improved third stage.

Initiate the development of new reentry vehicles, specifically designed for use against targets heavily defended with ABM's.

I will discuss each of these actions in greater detail later in connection with our other proposals for the strategic forces. But for now, let me point out that the net effect of these actions would be to increase greatly the overall effectiveness of our assured destruction force against the Soviet Union by mid-1972. Even if the Moscow-type ABM defense were deployed at other cities as well, the proposed U.S. missile force alone could inflict about 35 percent (86 million) fatalities on the Soviet Union in 1972—after absorbing a surprise attack.

As I noted earlier, a relatively small number of warheads detonated over 50 cities would destroy half of Red China's urban population and more than one-half of her industry.

Thus the strategic missile forces proposed for the fiscal year 1968-72 period would, by themselves, give us an assured destruction capability against both the Soviet Union and Red China, simultaneously.

Capability against "higher than expected threats"

As I indicated last year, our assured destruction capability is of such crucial importance to our security that we must be prepared to cope with Soviet strategic threats which are greater than those projected in the latest intelligence estimates.

The most severe threat we must consider in planning our assured destruction forces is an extensive, effective Soviet ABM deployment combined with a deployment of a substantial ICBM force with a hard-target kill capability. Such a Soviet offensive force might pose a threat to our Minuteman missiles. An extensive, effective Soviet ABM system might then be able to intercept and destroy a significant portion of our residual missile warheads, including those carried by submarine-launched missiles. (The Soviet offensive and defensive threats assumed here are both substantially higher than expected.)

To hedge against the possibility of such a threat to our land-based missile forces, we have authorized the development and production of the Poseidon. Should still additional offensive power be required, and such a requirement is not now clear, we are considering the development and deployment of a new Advanced ICBM, designed to reduce vulnerability to such a Soviet threat. The deployment of the Nike-X as a defense for our Minuteman force would offer a partial substitute for the possible further expansion of our offensive forces.

But again I want to emphasize that we don't know whether the Soviet Union will develop and deploy the kind of forces assumed

here. Even against this higher than expected threat, and even without a Nike-X defense of Minuteman, our proposed strategic missile and bomber forces could still inflict 40 percent or more fatalities on the Soviet population throughout the time period involved.

More extreme threats are highly unlikely. In any event, the changes we are now proposing in our strategic offensive forces would make it dangerous and expensive for the Soviet Union to move in the direction of more extreme threats to our assured destruction capability. If we assume, as I believe we should, that the Soviets would want to reduce the vulnerability of their own offensive forces against the possibility of a first strike by our very accurate forces in the fiscal year 1972-73 period, they must further disperse and harden their strategic missiles, which is exactly what they appear to be doing now. To do so is expensive and for the same budget outlay results in reduced missile payloads. Not to do so would leave the Soviet force highly vulnerable. Thus we can, in planning our forces, foreclose any seemingly "easy" and "cheap" paths to their achievement of a satisfactory assured destruction capability and a satisfactory damage limiting capability at the same time.

We of course, cannot preclude the possibility that the Soviet Union may increase its strategic forces budget at some time in the future. That is why we are now undertaking a very comprehensive study of a new strategic missile system. And that is why we are not precluding the possible future construction of new Poseidon submarines or the defense of our presently deployed Minuteman silos with Nike-X. While I believe we should place ourselves in a position to move forward promptly on all of these options if later that should become necessary, we need not commit ourselves to them now.

CAPABILITIES OF THE PROPOSED FORCES FOR DAMAGE LIMITATION

The principal issue in this area of the strategic forces program concerns the deployment of an ABM defense system, i.e., Nike-X. There are three somewhat overlapping but distinct major purposes for which we might want to deploy such a system at this time:

To protect our cities (and their population and industry) against a Soviet missile attack.

To protect our cities against a Red Chinese missile attack in the mid-1970's.

To help protect our land-based strategic offensive forces (i.e., Minuteman) against a Soviet missile attack.

After studying the subject exhaustively, and after hearing the views of our principal military and civilian advisors, we concluded that we should not initiate an ABM deployment at this time for any of these purposes. We believe that:

The Soviet Union would be forced to react to a U.S. ABM deployment by increasing its offensive nuclear force still further with the result that the risk of a Soviet nuclear attack on the United States would not be further decreased; and the damage to the United States from a Soviet nuclear attack in the event deterrence failed, would not be reduced in any meaningful sense.

As I noted earlier, the foundation of our security is the deterrence of a Soviet nuclear attack. We believe such an attack can be prevented if it is understood by the Soviets that we possess strategic nuclear

forces so powerful as to be capable of absorbing a Soviet first strike and surviving with sufficient strength to impose unacceptable damage on them. We have such power today. We must maintain it in the future, adjusting our forces to offset actual or potential changes in theirs.

There is nothing we have seen in either our own or the Soviet Union's technology which would lead us to believe we cannot do this. From the beginning of the Nike-Zeus project in 1955 through the end of this current fiscal year, we will have invested a total of about \$4 billion on ballistic missile defense research—including Nike-Zeus, Nike-X and Project Defender. And, during the last 5 or 6 years, we have spent about \$1.2 billion on the development of penetration aids to help ensure that our missiles could penetrate the enemy's defenses. As a result of these efforts, we have the technology already in hand to counter any offensive or defensive force changes the Soviet Union might undertake in the foreseeable future.

We believe the Soviet Union has essentially the same requirement for a deterrent or assured destruction force as the United States. Therefore, deployment by the United States of an ABM defense which would degrade the destruction capability of the Soviet's offensive force to an unacceptable level would lead to expansion of that force. This would leave us no better off than we were before.

With respect to protection of the United States against a possible Red Chinese nuclear attack, the lead time required for China to develop a significant ICBM force is greater than that required for deployment of our defense—therefore the Chinese threat in itself would not dictate the production of an ABM system at this time.

Similarly, although the protection of our land-based strategic offensive forces against the kind of heavy, sophisticated missile attack the Soviets may be able to mount in the mid- or late 1970's might later prove to be worth while, it is not yet necessary to produce and deploy the Nike-X for that purpose.

I have already discussed, in connection with my review of the capabilities of our strategic forces for assured destruction, the third major purpose for which we may want to deploy an ABM defense (i.e., the protection of Minuteman). Now I would like to discuss the other two purposes.

Deployment of Nike-X for defense of our cities against a Soviet attack

What is involved here is an analysis of the contribution the Nike-X system might make to the defense of our cities under two assumptions:

That the Soviets do not react to such a deployment.

That the Soviets do react in an attempt to preserve their "assured destruction" capability.

As you know, the major elements of the Nike-X system are being developed in such a way as to permit a variety of deployments; two have been selected for the purposes of this analysis. The first, which I will call "posture A," represents a light U.S. defense against a Soviet missile attack on our cities. It consists of an area defense of the entire continental United States, providing redundant (overlapping) coverage of key target areas; and, in addition, a relatively low-density Sprint defense of a number of the largest cities to provide some protection against those warheads which get through the area defense.

The second deployment, which I call "posture B," is a heavier defense against a Soviet attack. With the same area coverage, it provides a higher-density Sprint defense for twice the number of cities.

Shown on the figure 2 are the components and the costs (which, if past experience is any guide, may be understated by 50 to 100 per cent for the systems as a whole) ² of posture A and posture B.

FIGURE 2
Investment cost
[In billions]

	Posture A	Posture B
Radars:		
MAR		
TACMAR		
PAR		
MSR		
Investment cost.....	\$6.5	\$12.6
Missiles:		
Spartan		
Sprint		
Investment cost.....	2.4	4.8
DOD investment cost.....	8.9	17.4
AEC investment cost.....	1.0	2.0
Total investment cost (excluding R. & D.).....	9.9	19.4
Annual operating cost.....	.38	.72
Number of cities with terminal deficiencies.....	X	2X

The multifunction array radar (MAR) is a very powerful phased-array radar which can perform all the defense functions involved in engaging a large, sophisticated attack: central control and battle management, long-range search, acquisition of the target, discrimination of warheads from decoys or "spoofing" devices, precision tracking of the target, and control of the defense interceptor missiles.

The TACMAR radar is a scaled down, slightly less complex and less powerful version of the MAR, which can perform all the basic defense functions in a smaller, less sophisticated attack.

The perimeter acquisition radar (PAR) is a phased-array radar required for the very long-range search and acquisition functions involved in area defense. To achieve the full potential of the extended range Spartan, the target must be picked up at much greater distances in order to compute its trajectory before the Spartan is fired.

The missile site radar (MSR) is a much smaller, phased-array radar needed to control the Sprint and Spartan interceptor missiles during an engagement. It can also perform the functions of the TACMAR but on a considerably reduced scale. Actually, a number of different sizes are being studied. This "modular" approach will permit us to tailor the capacity of the radar to the particular needs of each defended area.

The Spartan is a three-stage missile with a nuclear warhead capable of intercepting incoming objects at relatively long range above the atmosphere.

² Even before the systems became operational, pressures would mount for their expansion at a cost of still additional billions. The unprotected, or relatively unprotected, areas of the United States would claim that their tax dollars were being diverted to protect New York and Washington while they were left naked. And critics would point out that our strategic offensive force is premised on a much larger Soviet threat (the "possible," not the "probable" threat); they would conclude that the same principles should be applied to our strategic defensive forces. For these and other reasons, I believe that, once started, an ABM system deployed with the objective of protecting the United States against the Soviet Union would require an expenditure on the order of \$40 billion over a 10-year period.

The Sprint is a shorter range, high-acceleration interceptor missile designed to make intercepts at lower altitudes.

The technical principles involved in the radars are now fairly well established. One research and development MAR-type has been constructed at the White Sands Missile Range. A contract has been let for the power plant of a second MAR-type radar, which is to be constructed on Kwajalein Atoll. The missile site radar is well along in development and the construction of one of these radars on Kwajalein Atoll has also begun.

Testing of the Sprint missile was started at White Sands in November 1965 and the tempo of testing will steadily increase during the current year. The Spartan is still on the drawing boards. It represents a very substantial redesign of the original Zeus and we will not know until it is flight tested how well it will perform.

Facilities for testing both the Sprint and the Spartan will be constructed on Kwajalein Atoll. These, together with the TACMAR and MSR and the programs for the computers, will give us all of the major elements of the Nike-X system which are essential to test its overall performance against reentry vehicles fired from Vandenberg AFB, Calif. (We feel we know enough about the PAR technology to be able to use the mechanically steered radars already on Kwajalein as simulators.) The system will be tested in stages, starting with the MSR and Sprint, then the Spartan missile and the TACMAR radar. A large number of test shots will be launched from the west coast of the United States to Kwajalein to test the system thoroughly as a whole. The most important objective of this effort is to determine proper system integration and computer programing, since the individual components of the system will have already been tested.

But even after this elaborate test program is completed, some technical uncertainties will still remain unresolved; this is to be expected in a system designed for such a highly complex mission. Moreover, we have learned from bitter experience that even when the development problems have been solved, a system can run into trouble in production or when it is put into operation. All too often the development prototype cannot be produced in quantity without extensive reengineering. Production delays are encountered and costs begin to spiral. Sometimes these problems are not discovered until the new system actually enters the inventory and has to function in an operational environment.

In this connection, it is worth noting that had we produced and deployed the Nike-Zeus system proposed by the Army in 1959 at an estimated cost of \$13 to \$14 billion, most of it would have had to be torn out and replaced, almost before it became operational, by the new missiles and radars of the Nike-X system. By the same token, other technological developments in offensive forces over the next 7 years may make obsolete or drastically degrade the Nike-X system as presently envisioned. We can predict with certainty that there will be substantial additional costs for updating any system we might consider installing at this time against the Soviet missile threat.

The deployment of a Nike-X system would also require some improvement in our defense against manned bomber attack in order to preclude the Soviets from undercutting the Nike-X defense; and we would want to expand and accelerate the fallout shelter program. The investment cost (including research and development) of the former is

estimated at about \$1.5 to \$2.4 billion and would provide for a small force of F-111 or F-12 type interceptors and airborne warning and control aircraft (AWACS). The expanded fallout shelter program would cost about \$800 million more than the one we are now producing. We would also need some of our antisubmarine warfare (ASW) forces for use against Soviet missile submarines, but we are not yet clear whether these ASW forces would actually have to be increased over the currently planned levels. In any event, the "current" estimates of the investment cost of the total damage limiting package would amount to at least \$12.2 billion for posture A and at least \$21.7 billion for posture B.

To test the contribution that each of these Nike-X deployments might make to our damage limiting objectives, we have projected both the United States and Soviet strategic nuclear forces (assuming no reaction by the Soviets to the U.S. ABM deployment) to the time when posture B, the heavier defense, could be fully in place.

The fatalities which these Soviet forces could inflict upon the United States (with and without a U.S. ABM defense) and the fatalities which the U.S. forces could inflict on the Soviet Union (with a Soviet ABM defense) are shown in the figure 3.

FIGURE 3

Number of fatalities¹ in an all-out strategic exchange (assumes no Soviet reaction to U.S. ABM deployment)

[In millions]²

	Soviets strike first, United States retaliates		United States strikes first, Soviets retaliate ³	
	U.S. fatalities	Soviet fatalities	U.S. fatalities	Soviet fatalities
U.S. programs:				
Approved.....	120	120+	100	70
Posture A.....	40	120+	30	70
Posture B.....	30	120+	20	70

¹ Fatality figures shown above represent deaths from blast and fallout; they do not include deaths resulting from fire, storms, disease, and general disruption of everyday life.

² The data in this table are highly sensitive to small changes in the pattern of attack and small changes in force levels.

³ Assumes United States minimizes U.S. fatalities by maximizing effectiveness of strike on Soviet offensive systems.

The first case, "Soviets Strike First, United States Retaliates," is the threat against which our strategic forces must be designed. The second case, "United States Strikes First, Soviets Retaliate," is the case that would determine the size and character of the Soviet reaction to changes in our strategic forces, if they wish, as they clearly do, to maintain an assured destruction capability against us.

These calculations indicate that without Nike-X and the other damage limiting programs discussed earlier, U.S. fatalities from a Soviet first strike could total about 120 million; even after absorbing that attack, we could inflict on the Soviet Union more than 120 million fatalities. Assuming the Soviets do not react to our deployment of an ABM defense against them, which is a most unrealistic assumption, posture A might reduce our fatalities to 40 million and posture B to about 30 million.

Although the fatality estimates shown for both the Soviet Union and the United States reflect some variations in the performance of their respective ABM systems, they are still based on the assumption that these systems will work at relatively high levels of effectiveness. If these ABM systems do not perform as well as our technical people postulate, fatalities on both sides could be considerably higher than shown in figure 3, or the costs would be considerably higher if major improvements or additions had to be made in the systems to bring them up to the postulated level of performance.

If the Soviets are determined to maintain an assured destruction capability against us and they believe that our deployment of an ABM defense would reduce our fatalities in the "United States Strikes First, Soviets Retaliate" case to the levels shown in figure 3, they would have no alternative but to increase the second strike damage potential of their offensive forces. They could do so in several different ways. Shown in the table below are the relative costs to the Soviet Union of responding to a U.S. ABM deployment in one of these possible ways:

Level of U.S. fatalities which Soviets believe will provide deterrence¹

Fatalities (millions):	Cost to the Soviets of offsetting U.S. cost to deploy an ABM
40-----	\$1 Soviet cost to \$4 U.S. cost.
60-----	\$1 Soviet cost to \$2 U.S. cost.
90-----	\$1 Soviet cost to \$1 U.S. cost.

¹ U.S. fatalities if United States strikes first and Soviets retaliate.

If the Soviets chose to respond in that way to our ABM deployment the results would be as shown in figure 4.

In short, the Soviets have it within their technical and economic capacities to offset any further damage limiting measures we might undertake provided they are determined to maintain their deterrent against us. It is the virtual certainty that the Soviets will act to maintain their deterrent which casts such grave doubts on the advisability of our deploying the Nike-X system for the protection of our cities against the kind of heavy, sophisticated missile attack they could launch in the 1970's. In all probability, all we would accomplish would be to increase greatly both their defense expenditures and ours without any gain in real security to either side.

Defense against the Red Chinese nuclear threat

With regard to the Red Chinese nuclear threat, an austere ABM defense might offer a high degree of protection to the nation against a missile attack, at least through the 1970's. The total investment cost of such a program might amount to \$3.5 billion, including the cost of the nuclear warheads.

FIGURE 4

Number of fatalities in an all-out strategic-exchange (assumes Soviet reaction to U.S. ABM deployment)

[In millions]

	Soviets strike first, United States retaliate		United States strikes first, Soviets retaliate	
	U.S. fatalities	Soviet fatalities	U.S. fatalities	Soviet fatalities
U.S. programs:				
Approved (no response).....	120	120+	100	70
Posture A.....	120	120+	90	70
Posture B.....	120	120+	90	70

The effectiveness of this deployment in reducing U.S. fatalities from a Red Chinese attack in the 1970's is shown in the table below:

Chinese strike first (Operational inventory)

	X missiles	3X missiles
U.S. fatalities (in millions):		
Without ABM.....	5	10
With ABM.....	0+	1

This austere defense could probably preclude damage in the 1970's almost entirely. As the Chinese force grows to the level it might achieve by 1980-85, additions and improvements might be required, but relatively modest additional outlays could probably limit the Chinese damage potential to low levels well beyond 1985.

It is not clear that we need an ABM defense against China. In any event, the lead time for deployment of a significant Chinese offensive force is longer than that required for U.S. ABM deployment; therefore, the decision for the latter need not be made now.

In the light of the foregoing analysis, we propose:

To pursue with undiminished vigor the development, test and evaluation of the Nike-X system (for which purpose a total of about \$440 million has been included in the fiscal year 1968 budget), but to take no action now to deploy the system.

To initiate negotiations with the Soviet Union designed, through formal or informal agreement, to limit the deployment of ABM systems.

To reconsider the deployment decision in the event these discussions prove unsuccessful; approximately \$375 million has been included in the fiscal year 1968 budget to provide for such actions as may be required at that time, e.g., the production of Nike-X for the defense of our offensive weapon systems.

I would now like to turn to our specific proposals for the strategic forces in the fiscal year 1968-72 period.

STRATEGIC OFFENSIVE FORCES

The force structure proposed for the fiscal year 1968-72 period is shown in the classified table furnished to the committee.

Missile forces

Last year I told this committee that:

The U.S. response to a Soviet deployment of an ABM defense would be the incorporation of appropriate penetration aids in our strategic missiles. Against area defense interceptors, penetration aids can be provided for U.S. missiles (so that an assured destruction capability is maintained) at a cost to us of less than 10 percent of the cost of an ABM defense to the Soviets. The leadtime for the Soviets to mount an ABM defense is greater than the time for us to produce and deploy penetration aids, provided we take timely action to develop them and can move forward promptly to produce them, and this we are doing. The decision actually to deploy new penetration aids can be made later this year. If the Soviets did attempt a large ABM defense we would still be able to produce and install the necessary penetration aids before the Soviets could achieve an extensive deployment.

* * * against a combined Soviet expanded strategic missile/ABM threat, the most efficient alternative available to us would be to develop Poseidon (with the new penetration aids) and retrofit it into Polaris boats. To hedge against the possibility of such a threat, we now propose to accelerate the development of the Poseidon missile (which was initiated last year). The timing of a decision to produce and deploy the missile would depend upon how this threat actually evolved.

This is essentially the program we now propose to pursue.

Minuteman. Last year we had planned a Minuteman force which would ultimately have consisted of a mix of 1,000 Minuteman II's and Minuteman III's with all the Minuteman I's phased out. Now, in order to increase the capability of this force against a possible strong Soviet ABM defense, we propose to increase the proportion of Minuteman III's in the force and equip them with a new improved third stage which will increase the payload of each missile. This increased payload will enable the Minuteman III to carry more penetration aids to counter an ABM defense. The total cost of this program is estimated at \$400 million, but it will cost the Soviet Union many times more in ABM defenses if they try to offset it.

We also propose to step up the schedule for reequipping the Minuteman II's with an improved reentry vehicle and to procure penetration aid packages for all Minuteman II and III missiles. Engineering development was started on these penetration aid packages last year. The total cost of this program is estimated at \$315 million, of which \$100 million was provided through fiscal year 1967, \$125 million is required in fiscal year 1968, and another \$90 million in subsequent years.

Eventually, it will probably become necessary to replace the earliest Minuteman II missiles because of their age. At that time we could add more Minuteman III's if that should appear desirable. Meanwhile, I believe we should initiate the development of a new improved reentry vehicle for the Minuteman III, and funds for this purpose have been included in the budget request.

Polaris-Poseidon. By the end of the current fiscal year, 39 of the planned 41-ship Polaris force will have become operational. The last two Polaris submarines will be deployed by September 1967.

I also believe it would be prudent at this time to commit the Poseidon missile to production and deployment. In order to hold to a minimum the number of submarines which would have to be withdrawn from the operational fleet, we propose to spread the Poseidon retrofit program over a period of years on a schedule tied to the regular overhaul cycle.

The total incremental cost of developing Poseidon, and producing and deploying the proposed force is estimated at \$3.3 billion. A total of about \$900 million is included in the fiscal year 1968 budget for Poseidon. (The decision to deploy Poseidon will produce an offsetting saving of about \$200 million in the Polaris program.)

Funds have also been included in the budget for the development of certain desired improvements for the Polaris missile.

Titan II. The Titan II force, consisting of 54 missiles deployed in hard silos, presently makes a unique contribution to our strategic offensive capabilities. However, with the deployment of Minuteman III and, later, of the Poseidon, this capability of the Titan II will no longer be unique. The Minuteman III from the continental United States and the Poseidon from forward undersea locations will be able to reach all the important targets in the Soviet Union.

Accordingly, we now propose to end procurement of new Titan boosters for testing and operational reliability demonstration with the fiscal year 1966 buy, and, instead, use boosters already in the inventory for these purposes in the future. With about six follow-on tests per year, the force of 54 Titan missiles on launchers can be maintained for a number of years.

New strategic missile systems. Although we believe the strategic missile programs now proposed will be adequate to meet the threat, even if the Soviet Union were to carry out a full scale deployment of an ABM system and develop more effective ICBM's, we are making a very comprehensive study of a new long-range missile system. To shorten the lead time on any option selected as a result of this study, we have included funds in the FY 1968 Budget for contract definition should such a decision become warranted.

Strategic bomber forces

The manned bomber forces we propose to maintain through fiscal year 1972 are the same as those I presented here last year for the fiscal year 1967-71 period. The B-52C-F's and B-58's will be phased out as planned, leaving a force of 255 B-52G-H's and 210 FB-111A's.

Since the new FB-111's with the SRAM air-to-surface missile will be entering the bomber force during fiscal year 1969-71 and the B-52G/H's can be maintained in a suitable operational condition well into the 1970's, there is no pressing need to decide on the production and deployment of a new bomber in the fiscal year 1968 budget. Clearly, the first order of business in the strategic offensive forces program at this time is the provision of penetration aids and other improvements for our presently planned strategic missile force, and the production and deployment of the new Poseidon. Nevertheless, we plan to continue work on the engine, avionics, and the related airframe studies, for which a total of \$26 million is programmed for fiscal year 1968.

Air launched missiles

Last year I said that we planned to keep the Hound Dog missiles in the operational inventory through fiscal year 1970, phasing their number down in step with the phase out of the B-52C-F's. We now propose to phase out the older Hound Dog "A" by end of fiscal year 1968, retaining only the "B" models.

The SRAM program is unchanged from that which I presented last year. While we still do not plan to deploy SRAM on the B-52G/H's, we are continuing the development of the necessary avionics to permit such a deployment if it should become desirable.

Strategic reconnaissance

The strategic reconnaissance force is the same as that presented a year ago.

STRATEGIC DEFENSIVE FORCES

The strategic defensive forces proposed for the fiscal years 1968-72 period are shown on the classified table provided to the committee. The civil defense program for fiscal year 1968 is shown separately.

Surveillance, warning, and control

The programs shown under this heading are, with two exceptions, the same as those I presented last year. Activation of BUIC III control centers will slip somewhat from the schedule shown last year due to delays in firming up the technical details of the program. The delay will be made up by the temporary retention of two of the BUIC II control centers and 12 of the manual backup centers through fiscal year 1968. By end of fiscal year 1969 all 19 BUIC III's should be operational and the remaining BUIC II and manual control centers will be phased out.

The second change pertains to the search radars. Last year we had planned to reduce the number of these radars to 151 by end fiscal year 1967. As you may recall, this reduction was predicated on the internetting of our radar system with that of the Federal Aviation Agency (FAA). However, in order to make the inputs from the FAA radars compatible with the SAGE-BUIC III system, they must first be converted into appropriate computer language by a special piece of equipment called a "digitizer." Because of a slippage in the production of this digitizer, five more Defense Department radars will have to be operated until fiscal year 1969, when we expect to be able to reduce the number to 149.

Manned interceptors

The manned interceptor forces are generally the same as those presented last year.

As you know, we have been studying during the past several years various ways of modernizing our air defense forces. Interceptor versions of both the SR-71 (F-12) and the F-111 have been considered for this role. Either one, equipped with the improved ASG-18/AIM 47 fire control and missile system and used with an effective airborne warning and control system (AWACS), would be better than the present interceptors in operating from degraded bases and independently of the vulnerable fixed ground environment, and in countering concentrated bomber attacks, including air-to-surface missiles. In fact, a small force of such aircraft operating with AWACS would have a combat capability superior to the programmed force of several hundred Century series fighters and the hundreds of ground radar and control sites.

The feasibility of this plan, however, depends upon the successful development of the AWACS. We now have a test program under way to examine three proposed solutions to the problem of developing an

overland airborne radar which could provide effective coverage at all altitudes. Design efforts are also being pursued on the airframe and avionics. We hope that by the end of this year sufficient data will be available to demonstrate the feasibility of the AWACS. Only then will we be in a position to make a decision on the interceptor force. Accordingly, we propose to continue development work on both the F-12 and the F-111 types of interceptors and on the fire control and missile systems, and \$20 million is included in the fiscal year 1968 budget for this purpose. Although no additional funds are requested for work on the AWACS airframe, another \$10 million is included in the fiscal year 1968 budget to continue work on overland radar technology.

Surface-to-air missiles

The Nike Hercules and Hawk missile forces are the same as planned a year ago except that we now intend to replace eventually some of the present Hawk missiles with the new Improved Hawk which is now in development.

In addition to the improved Hawk, which is designed primarily for the field forces, we also have in advanced development a new surface-to-air missile called the SAM-D. While this system is also primarily oriented toward air defense of the field forces, it also has a potential application for continental air defense. This effort, thus far, has been directed mainly to development of the required components or "building blocks" and a deployment decision at this time would be premature. Additional funds have been included in the fiscal year 1968 budget to continue development.

Ballistic missile warning

The numbers of ballistic missile early warning systems (BMEWS) and over-the-horizon (OTH) radar sites are the same as shown last year.

We are also continuing work on "back scatter" over-the-horizon radars.

An interim capability to detect sea launched ballistic missiles (SLBM's) is being phased in during fiscal year 1968. The SLBM detection system will include modified SAGE and SPACE-TRACK radars.

Antisatellite defense

As described in previous years, we have a capability to intercept and destroy hostile satellites within certain ranges. This capability will be maintained through fiscal year 1968.

CIVIL DEFENSE

The civil defense program proposed for fiscal year 1968 is essentially the same in content and objectives as that approved for the current year. The funds requested would carry forward the civil defense program at about the same level as the current fiscal year. A financial summary of the program, estimated to cost \$111 million in fiscal year 1968, appears in figure 5.

FIGURE 5

Financial summary of civil defense

[TOA : dollars in millions]

	Fiscal year—						
	1962	1963	1964	1965	1966	1967	1968
Shelter survey.....	55.4	9.3	7.1	10.6	17.7	18.4	18.0
Shelter improvement.....				1.4	2.5		
Shelter development.....	.3	1.4	1.7	3.6	5.1	5.0	³ 3.7
Marking and stocking.....	90.3	32.7	24.2	2.3	1.1	1.5	4.8
Shelter use.....				4.5	2.7	2.3	3.8
Warning.....	6.8	4.1	1.8	2.7	.6	.8	.9
Command, control, and communications.....	⁴ 22.9	3.1	6.5	8.4	11.6	3.9	2.8
Emergency operations support.....	16.8	10.1	6.7	6.0	6.6	6.5	9.7
Financial assistance.....	18.9	27.5	23.7	25.6	23.9	27.0	30.0
Information activities.....	3.9	3.4	2.0	1.4	1.7	2.3	2.5
Management.....	12.4	13.6	13.9	14.3	12.0	12.6	13.2
Research and development.....	19.0	11.0	10.0	10.0	10.0	10.0	10.0
Training and education.....	2.6	9.2	12.9	10.7	11.6	11.7	11.6
Total ⁵	252.3	125.4	110.5	101.5	105.1	102.1	111.0
Shelter spaces ⁶ (millions, cumulative):							
Identified.....		103.7	121.4	135.6	152.1	162.0	170.0
Marked ⁷		42.8	63.8	75.9	85.3	97.0	112.0
Stocked ⁷		9.7	23.8	33.8	41.3	49.0	56.0

¹ Total obligational authority.² Includes packaged ventilation kits.³ Includes architect and engineer advisory services on design techniques.⁴ Includes \$2,300,000 carryover from OCDM for construction of a regional center; \$13,400,000 returned to Treasury—not used by GSA in Federal building construction.⁵ Totals may not add due to rounding.⁶ Shelter spaces resulting from the currently approved program: fiscal years 1963 to 1966 are actual, fiscal years 1967 and 1968 are estimated.⁷ Only public shelters having 50 or more spaces are eligible for marking and stocking.

FINANCIAL SUMMARY

The strategic forces programs I have outlined will require total obligational authority of \$8.1 billion in fiscal year 1968. A comparison with prior years is shown below:

	1962 actual	1963 actual	1964 actual	1965 actual	1966 actual	1967 estimate	1968 proposed
Strategic forces.....	11.2	10.5	9.3	7.1	6.8	7.1	8.1

GENERAL PURPOSE FORCES

The General Purpose Forces include most of the Army's combat and combat support units, virtually all Navy units (except for the Polaris forces), all Marine Corps units, and the tactical units of the Air Force. These are the forces upon which we rely for all military actions short of general nuclear war, i.e., limited war and counter-insurgency operations.

REQUIREMENTS FOR GENERAL PURPOSE FORCES

Over the last few years I have presented to the committee in considerable detail or analysis of the limited war problem and our requirements for General Purpose Forces. I have pointed out that our strategic nuclear capability is designed to deter attack at but one end

of the spectrum of aggression and that we must, therefore, have other forms of military power, both to deter lesser aggressions and to defeat them if deterrence fails. We need these other forms of military power, not so much for the defense of our own territory as for the support of our commitments to other nations under the various collective defense arrangements we have entered into since the end of World War II. These include the Rio Pact in the Western Hemisphere, NATO in Europe, SEATO and ANZUS in the Far East, and the bilateral mutual defense agreements with Korea, Japan, the Republic of China, and the Philippines.

All of these mutual defense treaty commitments, involving a total of some 40-odd sovereign nations, stem from the great policy decision, made at the end of the Second World War, to base our security on the collective defense of the free world.

In fact even without these treaty obligations, I suspect that our country's action would not have differed significantly in the more than two decades which have elapsed since the end of World War II. We must remember that we twice came to the assistance of our friends in Western Europe without any prior treaty commitments; we did so because we deemed it vital to our own security. We came to the assistance of South Korea—and we are now assisting South Vietnam—for the same reason. So it is not the treaties themselves that cause our greater involvement in the affairs of the rest of the world, but rather what we deem to be our own vital national security interests over the longer run.

While the distinction between General Nuclear War Forces and Limited War Forces is somewhat arbitrary in that all of our forces would be employed in a general war, and certain elements of our strategic forces in a limited war (e.g., the B-52's against the Vietcong forces in Vietnam), it is primarily the limited war mission which shapes the size and character of the General Purpose Forces. Because we cannot predict in detail the actual contingencies we may have to face, we must build into our forces a capability to deal with a very wide range of situations. This accounts for the great diversification in the kinds of units, capabilities, weapons, equipment, supplies, and training which must be provided and seriously complicates the task of determining specific requirements.

Nevertheless, our continuing study of these requirements has reaffirmed my conclusion that the General Purpose Forces which I presented here a year ago are about the right order of magnitude. This conclusion takes into account the contributions to collective defense which our allies can be expected to make, as well as our own going capability to concentrate our military power rapidly in a distant threatened area.

Although our General Purpose Forces are primarily designed for nonnuclear warfare, we do not preclude the use of nuclear weapons even in limited wars. However, as I have pointed out in previous years, the employment of such weapons in a limited war would not necessarily be to our advantage in every case, and it would present some extremely difficult and complex problems.

A careful review of our General Purpose Force requirements, including the temporary augmentations for southeast Asia, indicates a need in fiscal year 1968 for a total land force of about 31½ division force equivalents. By "division force" I mean the division itself, plus all

of its support forces. The Army will have active division equivalents; and Marine Corps, four.

With regard to tactical air power we now have a total of about 4 — fighter, attack, and reconnaissance aircraft which constitute the — equipment of the combat squadrons of both the Active and Reserve Forces of the Air Force, Navy, and Marine Corps.

The nonaviation naval forces are more difficult to summarize in this manner and I will discuss them in detail later in the context with — Navy General Purpose Forces.

As I have pointed out on numerous occasions in the past, it is not enough that our forces be of the right — and composition; they must also be provided with the weapons, equipment, ammunition, and supplies needed to sustain them in combat. And, since most combat operations will usually involve all the services the logistics objectives which inscribe in broad terms the equipping and stockage standards to be followed, must be as uniform as possible throughout the Department. The objectives, together with the force to be supported and our contingency deployment plans, determine the content (and costs) of the annual procurement programs.

Of course, the specific procurement programs to achieve these logistic objectives must realistically take account of the state of the production base, especially for ammunition. The purpose of our war reserve inventories is to provide our forces with sufficient supplies to conduct sustained combat until production can be raised sufficiently to offset combat consumption. In peacetime, therefore, when production rates are tailored to low levels of consumption and attrition, it is important to have large stocks on hand, equal or nearly equal to the calculated war reserve objectives. However, once our forces have been committed to combat and production has been built up to offset current consumption, as is now the case in the current conflict, it is not necessary (indeed, it would be imprudent) to rebuild those stocks to their precombat inventory level before the conflict ends. It is not necessary because our present expanded production base will be able to provide for all expected southeast Asia consumption as well as any other contingency or contingencies which might arise. It would be imprudent because we know from experience that when the conflict ends, we either would have to shut down the lines abruptly, with all of the resultant adverse consequences for our economy, or we would have to acquire unwanted surpluses.

Accordingly, we have planned our fiscal year 1967-68 procurement program in such a way that if the war should end suddenly, we can taper off production gradually, using the excess production capacity to rebuild our inventories to the desired procombat levels. At the present production rates this could be achieved very quickly. For items which are not currently in expanded production for southeast Asian operations, or for new items just entering the inventory, we will, of course, continue to procure toward our logistics objectives with the goal of achieving them, wherever feasible and desirable, with the fiscal year 1968 buy.

CAPABILITIES OF THE PROGRAMED FORCES

As I noted earlier, our General Purpose Forces requirements are derived from analyses of contingencies, including the support of our allies around the world. Accordingly, our General Purpose Forces

capabilities must be assessed in conjunction with the capabilities of these allied forces. Although we have considerable knowledge of the force plans of our allies, we cannot be sure how they will change with the passage of time. This creates some uncertainty about the specific requirements for U.S. forces in the more distant years of the 5-year programing period, for which we must make allowances in our force planning.

ARMY GENERAL PURPOSE FORCES

The Department of Defense for many years, and under several administrations, has been striving to make the "One Army" concept a reality as well as a slogan. You may recall that when I appeared before the congressional committee in May 1961 in support of President Kennedy's recommendations on the realignment of the Army Reserve components, I noted that "they must be so organized, trained, and equipped as to permit their rapid integration into the Active Army." Since that time we have not only been working on the question of how the Reserve components should be organized but also on how the Reserve and Active Army structures could best be meshed together. This latter question requires not only a comprehensive analysis of the total Army force requirement but also a very careful and detailed analysis of which elements of the total structure should be provided in the Active Forces and which in the Reserve Forces.

Fundamental to this type of analysis is the concept of a "division force." Although the combat division has long been the most widely used standard for measuring the strength of the land forces, it accounts for only about one-third of the combat and support units required to sustain the division in combat over an extended period of time. A "ready" division without "ready" support elements would be incapable of combat. The division force concept ensures that our planning explicitly recognizes this relationship (indeed, interdependence) between the division and its major support elements, since it requires us to identify these elements in detail.

As a first approach to the problem, we have grouped all of the organized (T.O. & E.) units of the division force into three categories:

The division itself.

The initial support increment (ISI), i.e., the nondivisional combat and combat support units which are required to support the division in the initial combat phase.

The sustaining support increment (SSI), i.e., the additional nondivisional units including the combat, combat support, and service support needed by the division for sustained combat operations beyond the initial phase.

By structuring the division force in this way, we can see more clearly the relationship of the divisions themselves to the other Army units shown on the classified table provided to the committee.

In addition, the division force concept helps us to:

Relate standards of unit readiness, manning levels, etc., directly to the time phased unit deployment schedules, which underlie our contingency planning.

Determine more precisely which units must be provided in the actual forces and which could be provided in the Reserve components.

Tailor forces for particular missions, operational environments, and tempos of activity.

Understand better the relationship between support functions (supply, maintenance, transportation, etc.) and combat functions (maneuver and firepower), thereby enabling us to achieve a better allocation of resources among them.

Calculate more precisely the personnel and materiel requirements of each unit.

While the concept still needs considerable development before all of the foregoing advantages can be fully realized, it has already proved of significant value in our force planning.

Army force structure

The integrated Active-Reserve Army force structure proposed for the fiscal year 1968-72 period is grouped under three main headings—division and brigade forces, major supporting forces, and combat and support battalions.

Division and brigade forces. Because of the temporary Vietnam augmentations to the Active Army, the force structure we are proposing at the end of fiscal year 1968 is the equivalent of $27\frac{1}{3}$ division forces in the active and Reserve structure combined ($18\frac{1}{2}$ Active and nine Reserve components).

You may recall that funds were included in the fiscal year 1967 budget to initiate procurement of long leadtime items for the conversion of a second division to the airmobile configuration, if experience proved this desirable. The existing airmobile division, the 1st Cavalry, proved its worth in Vietnam and I have, therefore, tentatively approved the conversion of an airborne division to an airmobile configuration. The actual timing of this action is subject to the preparation of a detailed conversion plan by the Army and the JCS, but for planning purposes we have scheduled it for early fiscal year 1969.

Major supporting forces. This grouping covers the major supporting forces, most of which represent the initial or sustaining support for the division and brigade forces. In fiscal year 1969 (when an airborne division is converted to airmobile), the Army will keep a portion of the airborne assets to form a new permanent airborne brigade, thereby establishing the brigade total at seven.

Combat and support battalions. We now propose to make a small increase in the number of maneuver battalions.

With respect to artillery battalions, the demands of the conflict in southeast Asia together with our continuing study of the peacetime force requirements have caused us to make a number of changes in the structure. First, we now plan to increase the number of artillery battalions in the active forces. Second, our experience in Vietnam has shown that the mix of separate artillery battalions could contain more heavy 8-inch howitzers and 175-mm. gun battalions. Accordingly, a significant portion of the increase in artillery battalions will be of these types.

The number of engineer combat battalions in the active forces has been temporarily increased in order to meet southeast Asia needs.

The buildup of aviation units in the Army will continue through fiscal year 1968.

We now plan to initiate in fiscal year 1968 a new development program designed to ensure that the Nike-Hercules can continue to

operate effectively in the 1970's. This new program together with the Hawk improvement program will provide a hedge against possible slippage in the development of the SAM-D which is tentatively planned as a replacement for both Hercules and Hawk.

Last year we had tentatively planned to start procurement of the Improved Hawk in fiscal year 1968. However, the project has encountered some development problems and the program has slipped. Meanwhile we will go ahead with production preparations using the funds provided in fiscal year 1967 and those requested in fiscal year 1968 for production engineering and production prototype missiles.

Three types of operational gun/Chaparral battalions are being formed: a fully self-propelled battalion for the armored and mechanized divisions; a modified self-propelled version (including one towed gun battery which can be airlifted) for the infantry division; and an all-towed version for the airmobile and airborne division.

Army procurement

The revised fiscal year 1967 Army procurement program now totals \$5,863 million, of which \$2,130 million is included in the supplemental. The 1968 program totals \$5,881 million.

The fiscal year 1967 program now totals \$1,202 million for 2,697 aircraft, of which \$533 million is included in the supplemental request. The fiscal year 1968 program includes \$769 million for 1,479 aircraft. The aircraft to be procured include the UH-1B/D (Iroquois) tactical utility transport helicopter, the AH-1G (Cobra) armed helicopter, the CH-47 (Chinook) transport helicopter, the OH-6A observation helicopter, the CH-54A heavy lift helicopter, the U-21A administrative support aircraft, the OV-1C (Mohawk) fixed-wing observation aircraft, as well as a large number of training helicopters.

Funds are also requested for the procurement of long leadtime components for the AH-56A advanced aerial fire support system (AAFSS) to permit early initiation of production, when development warrants such a decision.

Army missile procurement (including spares) will total \$561 million in fiscal year 1967 and \$769 million in fiscal year 1968. The fiscal year 1968 program provides for ground support equipment for the Quick Reaction Alert Pershing battalions deployed in Europe; Lance missiles and related ground support equipment; initial procurement of the TOW missile system; a large quantity of Shillelagh missiles; Redeye and Chaparral air defense missiles; and ground support and training equipment for the Hawk missile system.

The revised fiscal year 1967 program for weapons and combat vehicles totals \$589 million (\$83 million in the supplemental request), and \$554 million is included in the fiscal year 1968 budget request. These funds will provide for completion of the planned procurement of the M-139 (HS-820) 20 mm. gun; substantial quantities of the 20 mm. Vulcan air defense gun and the 5.56 mm. rifle; and additional 81 mm. mortars and self-propelled 155 mm. howitzers. The funds requested will also provide for procurement of the M-578 light recovery vehicle, the General Sheridan armored reconnaissance and airborne assault vehicle, the M-113 armed personnel carrier, the 81 mm. and 107 mm. self-propelled mortars, the M-577 command post carrier and the M-54 cargo carrier. We have also included funds for M-60's with the 105 mm. gun, M-60's with the Shillelagh 152 mm.

gun, the armored vehicle bridge, and the combat engine vehicle, all of which use the M-54 chassis.

In fiscal year 1968, advance production engineering for the main battle tank will require \$11 million. Additional funds will be required for the U.S. share of the development costs.

The revised fiscal year 1967 program for trucks and other non-combat vehicles total \$653 million (\$154 in the supplemental request). For fiscal year 1968 \$483 million is requested for a variety of these vehicles. Included in the fiscal year 1968 program are ¼-ton, 1½-ton (M715), 2½-ton and 5-ton trucks of all types.

For communications and electronic procurement, the revised fiscal year 1967 program provides \$617 million (\$30 million in the supplemental request and the fiscal year 1968 request totals \$55 million.

For ammunition the Army's revised fiscal year 1967 program includes \$1,36* million (\$584 million in the supplemental request). For fiscal year 1968, \$2,2** million is requested. Ammunition procurement will continue to increase in fiscal year 1968 in order to meet the projected needs of southeast Asia. Among the major items are: small arms ammunition (5.56 mm., 7.62 mm., and 30 caliber); 40 mm. ammunition; 81 mm., 105 mm., 106 mm., 152 mm., 155 mm., and 4.2-inch cartridges; and 2.75-inch rockets.

The revised fiscal year 1967 program for other support equipment (road graders, tractors, etc.) totals \$608 million (\$247 million in the supplemental request) and \$437 million is requested for fiscal year 1968. The revised fiscal year 1967 program for production base support totals \$272 million, (\$220 million in the supplemental request and \$95 million is requested for fiscal year 1968.

NAVY GENERAL PURPOSE FORCES

The Navy General Purpose Forces proposed for the fiscal year 1968-72 period are shown on the classified table provided to the committee. Except for the Vietnamese-related forces, the major changes from the program planned last year concern the antisubmarine warfare forces, the guided missile ships, the amphibious ships and the minesweepers. There is, however, one general problem in this area which deserves special mention, and that is the dolorous state of the American shipbuilding industry.

It has become increasingly apparent in recent years that our shipbuilding industry, both public and private, has fallen far behind its competitors in other countries. Not only does it cost twice as much to build a ship in this country, it also takes twice as long.

This is a startling development in view of the fact that the United States is the most highly industrialized nation in the world. It is even more startling when we realize that the modernization of the European and Japanese yards has been achieved by applying, on a massive scale, U.S. automobile and aircraft manufacturing technology to shipbuilding.

Unfortunately, public discussion of the shipbuilding problem in this country has been focused on what is actually the minor part—its relationship to the Merchant Marine problem. I can well understand why the American flag line operators should wish to sever the present interlocking relationship between the Merchant Marine and the

shipbuilding industry; they could buy ships abroad at half the price and get delivery in about half the time. But while this divorce might solve the problem of the Merchant Marine, it would not solve the problem of the Defense Department. The U.S. Merchant Marine provides only a few hundred million dollars of work per year to the shipbuilding industry; Navy work amounts to between \$2 and \$2.5 billion a year. Thus the Defense Department, and the taxpayer, has a stake in the American shipbuilding industry which goes far beyond the immediate problems concerning the Merchant Marine.

Obviously, the more fundamental solution is to revitalize the American shipbuilding industry. Although we may never be able to overcome completely the wage rate differential, there is no reason why the American shipbuilding industry should not be, in a technological sense, as good as the best any other country has to offer. We have the technology and the manufacturing "know-how;" what we need to do is to find some way in which they can be applied to the American shipbuilding industry and some way to finance the relatively large investments that would be required.

With regard to Navy work, the Defense Department has already embarked on such a program. Wherever feasible, we are grouping our annual shipbuilding program into multiyear procurement.

Of perhaps greater significance over the longer run is the new procurement package approach, of which the fast deployment logistics (FDL) ship is an outstanding example. Under this approach, the shipbuilder is asked to bid on the entire package—design, development, and construction—of a relatively large number of ships to be delivered over a period of years, much like the package approach to aircraft procurement. Several new programs of this type are contemplated, and I will discuss these in context with our proposals for the Navy General Purpose Forces in the fiscal year 1968-72 period.

Attack carrier forces

Last year, I described to the committee a new plan under which we would maintain an active fleet of 15 attack carriers and 12 air wing equivalents, instead of the 13 carriers and 13 air wings we were planning on before. We made this change because of new force structure promises to provide significantly more usable combat power than the one previously planned—and at no increase in cost. However, a force of 15 carriers and 12 air wing equivalents would require some change in the present mode of operation. Carriers would normally deploy in peacetime with less than the maximum complement of aircraft and additional aircraft would be flown to the carriers when and as needed. In effect, we would be treating the attack carrier as a forward floating airbase, deploying the aircraft as the situation requires, much as we do in the present carrier operations off Vietnam. It is this kind of operational flexibility that enables the attack carriers to make a unique contribution to our overall tactical air capabilities.

Although the adjustment of the air wings to the new force structure is scheduled to begin in fiscal year 1968 and be completed by fiscal year 1971, the total number of combat aircraft assigned to the attack carrier force will remain virtually unchanged. You may recall that 2 years ago, in a decision unrelated to the number of carrier wings, we decided to increase the number of light attack aircraft per squadron, and the number of light attack squadrons per *Forrestal*-class carrier.

In terms of aircraft assigned, these increases, together with the replacement of *Essex*-class carriers with the much larger *Forrestal*'s and *Enterprise*'s will just about offset the reduction to 12 equivalent air wings. In other words, each equivalent air wing will have about 25 percent more aircraft than the present average air wing.

Ships. The attack carrier force at the end of the current fiscal year will consist of one nuclear-powered carrier, the *Enterprise*, and seven *Forrestal*, two *Midway*, and five *Essex* class. In fiscal year 1969, the last of the conventionally powered attack carriers now under construction, the *John F. Kennedy*, will join the fleet, followed in fiscal year 1972 by the second of the nuclear-powered carriers.

As I stated last year, if we are to retain a force of 15 carriers, two more will have to be provided. One is scheduled for fiscal year 1969 and one in a later year; both will be nuclear powered. Fifty million dollars is included in the fiscal year 1968 budget for long leadtime components for the fiscal year 1969 carrier. When these ships are delivered to the fleet the remaining *Essex*-class carriers will be retired from the CVA force, which would then consist of four nuclear powered, eight *Forrestal*- and three *Midway*-class carriers, for a total of 15.

Carrier aircraft. No major change is contemplated in the composition of the aircraft complement of the attack carrier forces from that projected a year ago. The decline in the number of fighter aircraft after fiscal year 1967 reflects two factors—the previously mentioned reduction from 15 to 12 air wing equivalents beginning in fiscal year 1968 and the substitution of the more capable F-111B for other fighter aircraft on a less than one for one basis.

In contract to the fighters the number of attack aircraft will have increased substantially by the time the transition to the 12 equivalent air wings is complete. At that point, the attack aircraft force will consist of A-6's and the new A-7's.

Inasmuch as the A-3 heavy aircraft are no longer required for the strategic mission, they are now being used as tankers to extend the range of "shorter legged" Navy aircraft.

No significant changes have been made in the combat readiness training aircraft forces.

ASW and destroyer forces

Three years ago in recognition of the unsatisfactory state of our knowledge in antisubmarine warfare I requested the Navy to undertake systematic long-term studies of all of the related aspects of the problem. From these studies has come a much better understanding of both the character and extent of the threat and the capabilities of the forces required to cope with it. As a result it now appears that some additional changes should be made in our ASW program. These involve the size of our ASW carrier forces and the substitution of land-based patrol aircraft for the seaplanes.

ASW carriers. We now have eight *Essex*-class ASW carriers, one of which, the *Intrepid*, is temporarily operating as an attack carrier in support of southeast Asia operations. Our studies show that compared with other ASW forces, the CVS ASW Group is a high-cost system in relation to its effectiveness; the annual operation cost of a CVS is about \$32 million, including about \$17.5 million for the aircraft complement.

As the newer ASW systems—the SSN's, the DE's, the P-3 patrol aircraft, etc.—join the fleet in increasing numbers, the relative value of the ASW carriers will continue to decline. Accordingly, we now propose to reduce the force somewhat when the conflict in Vietnam ends.

The older SH-34 helicopters or CVS's have already been replaced by the new SH-3, and the CVA's are now also being provided some of these helicopters.

The older S-2's will have been completely replaced by the newer S-2E's by the end of fiscal year 1967. While full scale development and procurement of a replacement aircraft should not be undertaken until the role of the CVS in the overall ASW effort of the 1970's has been clarified and until the need for a more sophisticated capability has been clearly demonstrated, we have included funds for contract definition of a new aircraft (VSX) should further study warrant our going ahead with this program.

In addition to its ASW aircraft each CVS is authorized a few A-4 in order to provide a limited intercept and air defense capability. Finally we will continue to maintain eight squadrons of carrier-based ASW search aircraft and four squadrons of ASW helicopters in the Naval Reserve Forces for the four CVS's we plan to retain in the Reserve fleet.

Attack submarine forces. By the end of the current fiscal year the submarine force, excluding Polaris will number 105 submarines, 32 of which will be nuclear powered. We have continued to encounter difficulty in getting the SSN program on schedule, principally because of the submarine safety program and a shortage of skilled workers. As a result we will have a few less SSN's in the force at end fiscal year 1967 than planned last year but we hope to make up most of this shortage next year. In the meantime, we propose to offset this slippage by delaying the phaseout of an equivalent number of conventionally powered submarines.

As I pointed out last year, a force of about 64 "first class" SSN's would be needed. Five SSN's were provided by the Congress in fiscal year 1967, leaving a total of six SSN's still to be funded. We now propose to start three more SSN's in fiscal year 1968 and three in fiscal year 1969. This program will give us a total of 64 first class SSN's, plus four other SSN's which could be used together with the conventionally powered submarines for other ASW missions. If our continuing study of the ASW problem should indicate that additional SSN's are required, we can add to this program next year.

Originally, we had intended to modernize 12 conventionally powered submarines (Korean war vintage of later), including provision of improved sonar. Last year, when it became apparent that these sonars were not going to be available in time, we decided to go ahead with the modernization of the first five submarines without the sonar improvements. It now appears that the new sonar components will still not be available for installation in the remaining seven submarines in fiscal year 1968. Moreover, other modernization costs have risen to the point where we now believe that it is no longer practical to proceed with the program. Accordingly, the plan to modernize these seven submarines in fiscal year 1968 has been dropped.

In the submarine direct support category, we propose a phased replacement program for our present submarine rescue ships (ASR's).

Therefore we tentatively propose to construct five new ASR's over the next few years. These new ASR's will have catamaran (i.e., twin) hulls and provide much greater deck space, including a helicopter platform, and better sea-keeping qualities than the present ships. They will be capable of operating two rescue submersibles and supporting divers at greater depths for prolonged periods. We are requesting \$17.7 million for the ASR in fiscal year 1968.

In addition to the 10 ASR's, which we plan to maintain throughout the period, the submarine direct support force includes six submarine tenders (AS) and nine auxiliary submarines (AGSS). Two new submarine tenders are tentatively scheduled to be constructed in future years.

ASW escorts. The requirement for ASW escorts can be met by several different types of ships most of which are also capable of performing other missions such as patrol, fire support and antiair warfare. In planning for our future ASW escort forces, all ships with an ASW capability are taken into account. However, only the destroyer types without a SAM capability are included under the ASW category; the SAM ships will be discussed later.

Two years ago we proposed a phased replacement program for the destroyer escort force. In accord with that plan, \$298 million has been included in the fiscal year 1968 request for 10 more of these ships.

With respect to the years beyond fiscal year 1968, it now appears that substantial construction and operating economies could be achieved with a newly designed ship (tentatively designated the DX) employing the "total package" procurement concept and a large multiyear buy. It may also be possible to use the same approach and the same or a similar design for a new class of guided missile ships (tentatively designated the DXG.) Accordingly, we propose to initiate a new program which would provide for:

- Standardized design and serial production of a sizable quantity of identical ships in order to minimize total procurement cost.

- Incentive to the contractor to design a highly automated ship requiring minimum manning in order to reduce operating costs.

- Standardization in order to reduce logistic support costs.

- Possible standardization/integration of the DX and DXG in order to maximize further advantages of standardization and serial construction (e.g., both ships might have the same hull and differ only in their weapon systems, or perhaps their hulls could have common bow and stern sections with separate mid-sections for each type).

- Possible use of modular design concepts so that major components (e.g., specific weapon systems) could be installed and removed *en bloc*, facilitating both repair and future modernization.

We have included \$30 million in the fiscal year 1968 budget to initiate concept formulation and contract definition of the DX/DXG. At the conclusion of the contract definition phase the entire program will be reevaluated in the light of the detailed designs and cost estimates which result.

We are also continuing to improve the SQS-23 sonars on most of the earlier DE's and on a large number of DD's, guided missile destroyers (DDG's), and cruisers (CG/CGN's). About \$18 million was programed for this purpose in fiscal year 1966, about \$11 million

in fiscal year 1967, and we are requesting another \$24 million in fiscal year 1968.

As I described a year ago, we are taking steps to improve the ASW capabilities of 13 remaining D-931 class destroyers, all of which are less than 12 years old. We are providing them with ASROC, improved communications, a new variable depth sonar (VDS), improved ECM capabilities, the improvement to the SQS-23 sonar, a modern ASW combat information center, etc.—at a cost of about \$14 million each. Since the VDS equipment will not be available this year, the ships are being rewired now to accept it later when it does become available. With these improvements, the 13 remaining DD's should offer comparable, and in some ways even better, ASW performance than the new DE's we are building.

Originally, having funded one in fiscal year 1964, we planned on five of these DD-931 conversions in fiscal year 1966 and five this year, with the last three scheduled for fiscal year 1968. However, because of equipment procurement problems, we have rescheduled the program. We have one in conversion now and plan to start three conversions this year, seven more in fiscal year 1968, and the last three in fiscal year 1969.

Patrol aircraft. While we still plan to maintain a total of 30 squadrons of ASW patrol aircraft, we now propose to phase out the three remaining squadrons of seaplanes (SP-5) and retain, instead, three squadrons of SP-2 land-based patrol aircraft. One squadron will be converted this year and the other two in fiscal year 1968. This change will permit us to decommission the three remaining seaplane support ships (AV's) and thereby save \$17 million per year in operating and indirect costs, with no reduction in our overall ASW or surveillance capability. Except for these three squadrons, all the SP-2's will be phased out of the active ASW patrol forces over the next few years and replaced with 27 squadrons of the new P-3's. (Ten squadrons of SF-2's will be retained in the Navy Reserve.)

Beginning in fiscal year 1968, all new P-3's will be procured with the A-NEW avionics system and when the force buildup is completed we will have nine squadrons so equipped.

Multipurpose SAM ships. The multipurpose surface-to-air missile (SAM) ships provide an important part of the fleet's antiair warfare (AAW) capability. As I described last year, our current program objective for the SAM force is 79 ships. By the end of fiscal year 1967 the SAM ship force will consist of 70 ships, three of them nuclear powered.

Last year Congress added funds to our original budget request for construction of a nuclear-powered frigate. As you know, we did not recommend the inclusion of such a ship in our fiscal year 1967 program. However, we have decided to proceed with construction this year.

I am also again recommending the construction of two guided-missile destroyers (DDG's).

The new DDG's and DLGN would have significantly improved AAW and ASW capabilities compared with present SAM ships, particularly in a hostile ECM environment. They will employ the new Standard missile and be equipped with the latest ASW equipment, the Navy tactical data system, and the improved SQS-26 sonar. Provisions would, of course, be made to incorporate new systems and

technologies as they become available, and space will be provided for this. Some \$167 million is requested for the two DDG's in fiscal year 1968.

In addition, we are continuing the SAM improvement program, under which the Standard missile is now being procured to replace both Tartar and Terrier.

Last year I mentioned that we were studying the feasibility of providing a "close-in" or "point" air defense capability for other types of combat ships. We now propose to procure and install a basic point defense surface missile system (PDSMS) on ships which are not likely to encounter the more sophisticated forms of air attack and which do not generally operate in the company of regular SAM ships—e.g., amphibious assault ships and destroyer types operating independently near hostile land areas. This system makes use of existing hardware (e.g., Sparrow III missiles) and can be installed on existing gun mount foundations.

About \$14 million has been included in fiscal year 1968 budget for the first procurement.

Other combatant ships

At end fiscal year 1967, there will be 23 ships in the small patrol category. These ships are used for coastal surveillance and patrol boats (PTF's) costing \$17 million have been added to the fiscal year 1967 program.

The primary mission of fire support ships, also included in this category, is to provide a heavy concentration of ship-to-shore fire during amphibious assaults. The Navy is presently studying the feasibility of a new type of landing force support ship which would combine the fire support capabilities of the cruiser's heavy guns and the rocket ship's saturation fire.

Amphibious assault ships

Last year I informed the committee that while our objectives of achieving a modernized (20-knot) amphibious lift for one and a half Marine Expeditionary Forces (MEF, of division/wing teams) and sufficient older ships to provide a slower lift for another half of a MEF remained the same, further study of the competition of the force had convinced us that some modification of the future construction program was desirable. I also noted that the Navy was investigating the possibility of designing a multipurpose ship which could combine the features of several different types of amphibious ships and that one of the reasons we had rescheduled the program was to provide time to develop a design for this new ship.

Unfortunately, experience has shown that our current LPD's are too small to be truly effective as a multipurpose amphibious ship in the assault role and they cannot by themselves serve as a replacement for a variety of specialized ships. For this purpose we need a bigger assault ship capable of landing, either by air or by sea, a much larger and more balanced land force than is now possible with any existing amphibious vessel, and this was the type of ship I mentioned last year.

Our further study of this problem indicates that the development of such a ship is not only feasible but highly desirable. On the basis of the Navy's preliminary design work, this amphibious assault ship,

now designated the LHA, would be quite large (about 40,000 tons, compared with less than 18,000 tons for the LPD) and would have both a boat well and a helicopter deck.

In view of these advantages, we now propose to substitute LHA's for a variety of specialized amphibious ships which we had previously programed. The first of these LHA's has been included in the fiscal year 1967 program. As in the case of the C-5— and the fast deployment logistic ships, we plan to use the two-step contract definition, total package procurement technique for the LHA's and \$18 million is included in the fiscal year 1968 budget for contract definition in addition to funds for the construction of the first ship.

One of the goals we hope to achieve in this program is a considerable reduction in operating costs. To this end the competing contractors will be encouraged to design this ship so that it can be operated by significantly fewer personnel than previous ships of this size.

Mine countermeasure force

At the end of this fiscal year we will have a mine countermeasure force of 88 ships, composed of 64 ocean minesweepers (MSO's), 18 coastal minesweepers (MSC's), three mine countermeasures support ships (MCS's), and three other support ships.

In order to modernize this force and improve its mine countermeasure capabilities, we propose to undertake a major rehabilitation program for all the existing MSO's. We propose to start the rehabilitation of nine MSO's in fiscal year 1968, for which we are requesting \$33 million.

Two years ago, we started a construction program for new MSO's. Four MSO's were funded in fiscal year 1966, five more in fiscal year 1967, and we are requesting \$61 million in fiscal year 1968 for the last seven.

Last year we initiated a program to provide some of the Marine Corps assault helicopters (CH-53's) with a secondary mine-sweeping capability. Modification of some of these helicopters to accept the sweep equipment was begun last year, and we plan to start more in fiscal year 1968. This program will give our assault forces a significantly augmented minesweeping capability against less sophisticated mines at a total cost of only about \$12 million.

Logistical, operational support, and direct support ships

In order to take advantage of modern resupply methods and to complement the higher speeds of our latest ships, we have planned a long range construction program to rebuild the underway replenishment fleet. The fiscal year 1968 program includes two AE's (ammunition ships) and one AOE (fast combat support ship) at an estimated cost of \$137 million.

Marine Corps forces

The major Marine Corps ground and air units shown on the classified table provided to the committee are essentially the same as those we projected last year. The temporary units added to support the southeast Asia deployments include a fourth active division with its associated nine infantry, one tank, one amphibian tractor, and the equivalent of five artillery battalions, four Hawk air defense batteries, and two light observation and two medium transport helicopter

squadrons. The permanent force remains at four divisions/aircraft wings (three active and one reserve).

The Marine Corps fighter forces will be maintained at about the current level.

The tactical air control (TAC) force, which is used to locate enemy targets and then direct the attack aircraft to them, is programed to remain at the present level.

In the transport helicopter category, we now plan to maintain the currently augmented active force level through fiscal year 1969, while simultaneously building our Reserve structure. When the Vietnam conflict ends the Marine Corps transport helicopter force will return to the planned permanent level.

In the light helicopter and observation category the total number of aircraft will be increased significantly in fiscal year 1968 through the temporary retention of O-1's and UH-1's previously scheduled to phase out after the new OV-10's are delivered.

Last year we undertook a major program to increase the fixed-wing combat readiness training capabilities of the Marine Corps. This program will be continued. We also undertook at that time, on a temporary basis, a program of combat readiness training for Marine Corps helicopter pilots. We now plan to make the combat crew readiness training program permanent and to expand the force level. Later, as the OV-10 enters the operating force, we plan to add some of these aircraft to the combat readiness training force.

The numbers of tanker/transport aircraft and of support aircraft are essentially unchanged from those presented last year.

Navy and Marine Corps Reserve forces

The Navy will continue to maintain a total of about 50 ships in the Naval Reserve. As more modern ships become available from the active forces, older ships will be phased out.

The Navy also maintains a large number of ships in the Reserve (or "mothball") Fleet, in either category B (Bravo) or category C (Charlie) according to their physical condition and readiness status.

As I noted last year, because of their relatively poor physical condition many of the Charlie ships would be usable only after extensive overhaul and modernization. Accordingly the Navy is continuously surveying these ships in order to identify those which have no further value. These ships are then scrapped or otherwise disposed of. As a result, the size of the Reserve Fleet has been progressively reduced.

The Naval and Marine Corps Reserve air units are programed for about 740 aircraft at the end of this fiscal year, and this number will be increased over the next few years.

Navy-Marine Corps aircraft procurement

The Navy and Marine Corps aircraft procurement program is shown on the classified table provided to the committee. In order to meet the requirements of the southeast Asia conflict and continue the planned modernization of the force, we propose to increase the fiscal year 1967 program from the original 620 aircraft to 1,047, and to buy another 680 aircraft in fiscal year 1968 instead of the 604 planned a year ago.

With regard to the modernization of the attack carrier fighter forces, we still plan to initiate F-111B procurement in fiscal year 1968.

To provide for combat attrition beyond fiscal year 1967 and com-

plete the equipping of the Marine Corps fighter squadrons, we have increased the fiscal year 1967-68 F-4 procurement programs substantially over the number previously planned. This will permit the replacement of the last Marine Corps F-8 squadron in fiscal year 1968.

Since we plan to retain a number of F-8 aircraft in both the Active Fleet (for the *Essex*-class CVA's) and the Reserve Forces for some time beyond fiscal year 1968, we have decided to rework a substantial number of the latest models, providing them with new wings and other life-extension modifications. The program was initiated last spring, using about \$17 million of fiscal year 1966 funds; \$70 million is included in the revised fiscal year 1967 budget; another \$70 million is requested for fiscal year 1968.

In the attack category we now plan to increase substantially the fiscal year 1967-68 procurement program envisioned a year ago. We have added A-4F's and A-6A's to the fiscal year 1967 program, and A-6A's to the fiscal year 1968 program. The A-7 program for fiscal year 1967-68 is about the same as presented a year ago.

Last year we had planned on buying the first 100 OV-10 aircraft for the Marine Corps in fiscal year 1967. However, the need for certain design changes has delayed the award of the contract and has caused us to reduce the fiscal year 1967 quantity. Additional OV-10's will be procured in fiscal year 1968.

For the ASW mission, another increment of the P-3's with A-NEW will be procured in fiscal year 1968.

To provide for the higher tempo of operations and future combat attrition in Vietnam, we are increasing our procurement of helicopters in fiscal year 1967, and buying more in fiscal year 1968.

In the fleet tactical and mission support category, we have added some C-130 radio relay aircraft to the fiscal year 1967 program and canceled the previously planned C-2A procurement.

The increase in planned pilot production from 2,200 to 2,525 per year will require the procurement of additional training aircraft.

Accordingly, we have canceled the previously planned procurement of 72 T-28C's in fiscal year 1966 and 58 in fiscal year 1967, and instead we now propose to procure 36 T-2B's and 94 TA-4's in fiscal year 1967, and 90 T-37B's in fiscal year 1968. We have also included in the fiscal year 1967 program 9 TC-4C's (a version of the Grumman Gulfstream) for navigator bombardier training. This will reduce the requirement for A-6A's now being used for this purpose.

For helicopter training we will be able to utilize UH-1E's as they are released by new OV-10's phasing into the force, thus permitting the cancellation of the 20 TH-1E planned for procurement in fiscal year 1967. In addition, we plan to buy 40 new instrumented light turbine helicopters (LTH's) in fiscal year 1968 to provide the increased training capacity mentioned earlier.

Other Navy procurement

In order to build toward our logistics objectives and to provide for projected combat consumption in southeast Asia, we are requesting \$1,389 million in fiscal year 1967 (of which \$164 million is included in the supplemental request) for Navy missiles, ordnance, and ammunition; and \$1,723 million more is requested in the fiscal year 1968 budget for this purpose.

Large quantities of air-to-ground munitions will continue to be needed in fiscal year 1967-68. The largest single item in this category is the MK-82 500-pound bomb. Other important items in the fiscal year 1968 program are the 2.75-inch rockets, the 5-inch Zuni rockets, the 250-pound bomb, Walleye TV-guided glide bombs, and air-to-surface antiradiation missiles.

For the surface-to-air missile ships which provide the fleet's air defense, the Navy will procure only the new Standard missile beginning in fiscal year 1968, although deliveries of Terrier and Tartar missiles will continue for some time. We are requesting \$5 million in fiscal year 1968 for both the medium range and the extended-range Standard missiles.

Funds for the procurement of the final quantity of Talos missiles are included in the fiscal year 1968 budget.

With respect to air-to-air missiles we are buying both the Sidewinder and the Sparrow III in fiscal year 1968. We also propose to initiate pilot line production of the Phoenix missile in fiscal year 1968.

In the ASW category, we plan to continue the procurement of Asroc and Subroc in fiscal year 1968.

Last year I informed the committee that the DASH ASW drone helicopter was encountering higher than expected peacetime attrition at lower than expected performance, and that we would review the entire program. As a result of this review, we have now decided to reduce the planned deployment of this system to about one-third. This reduction in deployment will permit cancellation of the previously planned fiscal year 1967 procurement.

Improved ASW torpedoes continue to be a major prerequisite to a more effective ASW force, and this category of weapons has continued to receive our close attention. In an attempt to expand the production base for the MK-46 and obtain the cost benefits of competitive procurement, we have opened a second production source. Although we have achieved the cost benefits (the torpedoes bought in fiscal year 1966, for example, cost \$124.3 million compared with the budget estimate of \$179 million), it now seems clear that we will not achieve the production levels in fiscal year 1967 originally expected. Accordingly, the fiscal year 1968 procurement is adjusted to take this slippage into account.

Funds are also included in the fiscal year 1968 budget for the AN/SSQ-41 (Julie, Jezebel), an improved sonobuoy capable of employment in either an active (Julie) or passive (Jezebel) mode.

Finally, a total of about \$125 million is included in the fiscal year 1968 Budget for 8-inch, 6-inch, and 5-inch naval gun ammunition to meet the consumption requirements of southeast Asia and continue the buildup of our stocks.

Marine Corps procurement

The fiscal year 1967 Marine Corps procurement now totals \$541 million, of which \$253 million is included in the fiscal year 1967 supplemental. For fiscal year 1968, a total of \$715 million is requested. Included in the fiscal year 1967 total is \$231 million for munitions and ordnance (\$114 million in the supplemental); \$463 million is included for this purpose in fiscal year 1968.

The fiscal year 1967 supplemental provides about \$70 million for the procurement of support vehicles such as $\frac{1}{4}$ -, $\frac{1}{2}$ -, $2\frac{1}{2}$ -, and 5-ton

trucks, and \$39 million more is included for support vehicles in fiscal year 1968. For tracked vehicles, \$4 million is included in the fiscal year 1967 supplemental and \$5 million in the fiscal year 1968 budget.

In the communications and electronics category, which includes such major items as radars and the Marine Corps tactical data system (MTDS), we have increased our fiscal year 1967 procurement to \$107 million, \$29 million of which is included in the supplemental request. Another \$145 million is included for communications and electronic equipment in fiscal year 1968.

AIR FORCE GENERAL PURPOSE FORCES

The Air Force General Purpose Forces shown on the classified table provided to the committee are essentially the same as those presented a year ago, with the exception of certain changes related to our operation in Vietnam.

Fighter and attack

Our long-range force objective in this category is the same as last year, namely, 24 wings of F-4's, F-111's, and A-7's. In the near term, however, we now propose to make several changes in the force structure and procurement programs. For the most part, these adjustments are related to operations in southeast Asia, in particular, the changes in our budget planning assumptions and the variations from the projected combat attrition rates reflected in our force planning last year. And, in a few cases, the proposed changes are the result of adjustments in production schedules.

The B-57's that we are using in South Vietnam will decline in number through fiscal year 1968, after which they are scheduled to phase out of active service completely.

With respect to the F-100's, we had originally planned to phase down the active force to fewer aircraft by end fiscal year 1967. However, attrition has been lower than forecast and we will have more squadrons in the force at end fiscal year 1967 than we had previously planned.

Last year we had planned to hold a large number of F-102's in the force through fiscal year 1967 and then phase down considerably in fiscal year 1968. However, in order to free F-4's for deployment to Vietnam, F-102's scheduled to phase out of the continental air defense forces were transferred to the tactical forces in fiscal year 1966.

Last year we had planned to retain the two F-104 squadrons through fiscal year 1967. However, we now plan to have only one squadron at end of fiscal year 1967 and phase this squadron out by the end of fiscal year 1968.

The number of F-105's in the active force is projected to decline, and ultimately these aircraft will be phased into the Air National Guard.

The F-4's are experiencing somewhat lower attrition than forecast last January and this will help the force to build up faster than planned.

The F-111 activation schedule is the same as planned last year, except, for a small slippage in a few of the later squadrons.

Last year, in order to help diversify the Air Force tactical fighter force, we proposed the procurement of the A-7, a relatively inexpensive subsonic aircraft with good range, large ordnance-carrying capa-

bility, long loiter time, and good close ground support features. Our original deployment schedule called for activation of the first squadron in fiscal year 1968 with more to be introduced later. However, this schedule was predicated on an early decision to proceed with the deployment of an afterburner for the Air Force A-7.

Two considerations caused us first to delay and then change this decision. First, it appeared desirable, if possible, to find a new engine production source rather than add to the already crowded schedule of one of our principal engine manufacturers. Second, if a different, more powerful engine could be used, the load-carrying capacity of the A-7 would not have to be penalized by several hundred pounds of dead weight which the afterburner would involve. Such an engine, the Rolls Royce's "Spey," proved to be obtainable from Allison, who will produce it in the United States under license from the British firm. The net result of this decision will be a more capable aircraft but a delayed delivery schedule for the first aircraft. However, a new, faster production schedule will still permit the achievement of the projected force by the originally planned date.

Tactical reconnaissance

The present long-range objective for the tactical reconnaissance force remains the same as a year ago.

Because of anticipated southeast Asia attrition and higher training requirements, the RF-101 force had been expected to decline by the end of the current year and then level off. In order to maintain that level, we will have to modify additional F-101's to the RF-101 configuration.

With respect to the RF-4's, the force will be built up to its full planned strength, although projected attrition in southeast Asia will cause a slight delay in the scheduled buildup.

Ultimately, we will probably want to introduce a more advanced capability into the tactical reconnaissance force. To this end we initiated in fiscal year 1966 a development project which would provide a reconnaissance version of the F-111. This development provides for the necessary equipment to be installed in the attack version of the F-111 with minimum modification to the aircraft. Through fiscal year 1967, \$25 million has been devoted to this effort and \$2 million more is included in the fiscal year 1968 requested. An additional substantial sum is included in our request for the initial procurement.

Tactical electronic warfare support

With the increasing importance of electronic warfare, underscored by our experience in southeast Asia, we have decided to establish a separate tactical electronic warfare support (TEWS) force in the Air Force General Purpose Forces. This force will be composed of EB-66's converted from the RB/EB-66 aircraft previously shown in the reconnaissance category, and EC-47's (formerly RC-47's).

In order to provide sufficient aircraft for training, maintenance and advanced attrition, we plan to convert the RB-66's now in the force and WB-66's now in storage to the EB-66 configuration; this will involve some modification of the engines and provision of new ECM gear. A substantial sum is requested in the fiscal year 1967 supplemental for these modifications. Later, as advanced electronic equip-

ment becomes available (e.g., from the Navy EA-6B program), it may be retrofitted into these aircraft.

Special air warfare forces

Since its creation in 1962, the Special Air Warfare (SAW) Forces have grown both in size and in the range of missions performed.

In order to meet the requirement of the Vietnam conflict, we have increased the size of the SAW Force. This increase includes additional O-2's, AC-47's, C-123's, C-47's, and A-37's, partially offset by the reduction of A-1's.

Other aircraft

The tactical air control system (TACS) provides the command and control capability for the tactical air commander in field operations. Currently, the Air Force is using modified O-1 aircraft transferred from the Army for the airborne forward air controller (AFAC) mission in southeast Asia. Last year, we had planned to convert this force completely to OV-10's by the end of fiscal year 1968. However, during the past year the requirement for AFAC aircraft has virtually doubled and, as a result, the authorized TACS force has been increased. In addition, the OV-10 program has slipped and we do not now expect deliveries of that aircraft to the Air Force to be made as fast as originally planned. In order to build up the force as soon as possible, we have already taken action to procure an off-the-shelf Cessna aircraft designated the O-2. With respect to the longer term, it is too early to make a final determination of the size and composition of the TACS force, a matter we now have under study.

Combat readiness training

As described a year ago, we want to increase the size of the advanced flying training base very significantly over what it has been in recent years. Predicated on the assumption that the southeast Asia conflict would end by June 30, 1967, this expansion was to have been substantially achieved by the end of fiscal year 1968. Now, however, under our revised budget planning assumption, completion of the buildup of the training base in terms of aircraft would be delayed until the following year.

Tactical missiles

As I indicated last year, the remaining Mace B missiles (one squadron) deployed in Germany will be phased out as Pershing takes over the quick reaction alert (QRA) ————. The remaining Mace B's deployed in Okinawa, however, are tentatively scheduled to remain in the active force through the program period.

Air National Guard

A number of changes have been made in the planned equipage of Air National Guard squadrons, most of them related to changes in the active structure. The Guard will retain more F-84's and F-86's longer in order to offset delays in the transfer of F-100's and F-105's from the Active Forces. The Guard will have 547 tactical fighters at the end of fiscal year 1967 and this number is scheduled to increase modestly in future years.

Aircraft procurement

The Air Force will procure a total of 732 tactical, air control, and reconnaissance aircraft for the General Purpose Forces in fiscal year

1967, at a total cost of \$1,847 million. (Of the total, 102 aircraft costing \$457 million are in the fiscal year 1967 supplemental request.) For fiscal year 1968, 874 aircraft costing \$2,076 million are requested for these forces. Both the fiscal year 1967 and fiscal year 1968 programs provide for combat attrition through the normal production lead time. Accordingly, if the Vietnam conflict should end before that date, both the active and reserve Air Force structures would be modernized faster than now projected.

Last year, we had scheduled procurement of a sizable number of F-4 aircraft for fiscal year 1967 and a final procurement in fiscal year 1968. We now propose to increase the fiscal year 1967 program and buy an even larger quantity in fiscal year 1968.

With respect to the F-111A, we now plan to buy somewhat fewer aircraft in fiscal year 1968 than we planned last year so as to be able to include certain improvements, which are now being made, in more of the aircraft. The aircraft deleted from the fiscal year 1968 program will be added to the end of the line.

The Air Force's A-7 program has, as I indicated earlier, slipped substantially from that projected a year ago. The fiscal year 1966 buy has been deleted and the fiscal year 1967 buy reduced. For fiscal year 1968 we plan to buy a large number of A-7's, and additional offsetting upward adjustments in procurement in subsequent years should permit us to achieve the planned force level by the originally scheduled date.

Last year we had tentatively scheduled procurement of 157 OV-10's for the TACS force. However, the TACS requirement has grown sharply during the past year, leading to the decision to buy the O-2 and this, coupled with a delay in projected OV-10 deliveries and an increase in the cost of that aircraft, has caused us to revise our planned procurement program. Although we still plan to purchase 157 OV-10's for the TACS mission, the fiscal year 1967 buy has been reduced and the difference added to the fiscal year 1968 program. Further procurement of the OV-10 for the Air Force will depend upon a future decision to use it to help modernize the Special Air Warfare Forces.

As previously mentioned, action has already been initiated to procure 176 O-2A aircraft in fiscal year 1967 for the TACS force and SAW Force's program to provide for combat attrition replacement.

More A-37 aircraft have been added to the fiscal year 1967 program and still more will be procured in fiscal year 1968. We also plan to buy more F-5's, principally to help modernize the Vietnamese Air Force.

Finally, to offset projected attrition of reconnaissance aircraft in southeast Asia, the fiscal year 1968 quantity of RF-4 aircraft has been increased and more will be procured later for advance peacetime attrition. And, as previously mentioned, to maintain the desired level of RF-101 squadrons, we will convert a number of F-101's to the reconnaissance configuration in fiscal year 1968.

Other Air Force procurement

The Air Force's aircraft nonnuclear ordnance program for fiscal year 1967 totals \$1,739 million, of which \$438 million is included in the supplemental request. The proposed fiscal year 1968 program totals \$1,629 million.

"Iron bombs," which are being consumed at high rates in southeast Asia, will continue to dominate the fiscal year 1967-68 procurement programs. For these 2 years, \$1,400 million will be spent on these bombs, including 250-pound, 500-pound, 750-pound, and 2,000-pound bombs; \$31 million is for napalm bombs and \$463 million is for 2.75-inch rockets and 20 mm. ammunition. For certain special purpose ordnance, \$888 million is requested.

Also included in the Air Force's fiscal year 1967-68 program is \$241 million for TV-guided Walleye's, antiradiation missiles, and Sparrow air-to-air missiles.

Theater airbase vulnerability

The theater airbase vulnerability program is designed to minimize the damage an enemy could do to our overseas airfields, and the aircraft on them, in a nonnuclear attack.

This year's request for \$26 million will provide various vulnerability reductions measures (shelters, paving for dispersal sites, POL facility hardening, etc.) at a number of European and Pacific bases. The total program presently envisioned would ultimately provide shelter for a significant number of aircraft and other high-value aviation equipment, together with the full range of other vulnerability measures—at a total cost of about \$178 million. I urge the Congress to provide the \$26 million included in our fiscal year 1968 request so that we may get started promptly on this critical program.

TACTICAL EXERCISES

Under normal peacetime conditions, large scale strategic mobility and tactical exercises contribute to the maintenance of high combat readiness, provide highly visible demonstrations of our capabilities, help test new operational concepts and weapon systems, and permit U.S. and allied forces to perfect coordination procedures which they would have to use in wartime. However, with the expansion of combat operations in southeast Asia during the past 18 months, the importance of simulating such operations has dropped sharply and in fiscal year 1966, only about \$9 million was used for the larger exercises "directed" or "coordinated" by the Joint Chiefs of Staff. Therefore, on the assumption that the Vietnam conflict will continue through fiscal year 1968, we have budgeted only \$27 million for this purpose, far below the \$100 million plus level of pre-Vietnam years.

FINANCIAL SUMMARY

The General Purpose Forces program outlined above will require total obligational authority of \$35.4 billion in fiscal year 1968.

A comparison with prior years is shown below:

[In billions of dollars]

	Fiscal year—						
	1962 actual	1963 actual	1964 actual	1965 actual	1966 actual	1967 estimate	1968 proposed
Total obligational authority....	18.0	17.9	18.0	19.1	29.5	34.3	34.4

AIRLIFT AND SEALIFT FORCES

Included in this program are the Military Airlift Command transports, the Air Force's troop carrier aircraft assigned to the Tactical Air Command and the unified commands, the transport and troop carrier aircraft in the Air Force's reserve components, and the troop ships, cargo ships, tankers and "forward mobile depot" ships operated by the Military Sea Transportation Service.

Although not specifically included in the airlift/sealift program, those elements of other major programs whose missions and capabilities are closely related to the general requirement for lift have also been considered in determining what forces should be provided here. These other elements include such specialized transportation forces as the carrier-on-board delivery aircraft of the Navy and the cargo aircraft of the Marine Corps.

Within the context of this specific program, the lift mission consists of two main tasks: the strategic requirement for transport support of military operations in overseas areas and the tactical requirement for intratheater and assault airlift. The strategic task can be further divided into the requirement for the initial rapid military response to distant crises and the longer term requirement for continuing support and resupply of overseas military operations. This distinction is very important because it helps determine what kind of equipment is needed, when it must be available, how it should be organized and deployed, and who should control it. As you know, during the past several years, our principal concern in the airlift/sealift area has been to build up a quick-reaction capability adequate to meet our global security commitments. More recently, our experience in supporting a major military deployment in southeast Asia has focused our attention on the problems of providing lift support over the longer term, and especially under conditions when it is not feasible to requisition commercial shipping.

STRATEGIC MOVEMENT

All of our studies show that the length and cost of a war, as well as the size of the force ultimately required to terminate it favorably, are importantly influenced by how fast we can bring the full weight of our military power to bear on the situation.

In previous posture statements I have discussed at some length the range of strategies available to us for meeting the requirement for such prompt and effective response to distant military contingencies. Basically, these choices range from reliance on large ready forces deployed overseas in advance of need, to reliance on a central reserve of men and equipment in the United States to be deployed by airlift and sealift as required. A strategy which combines features of both these extremes might provide for prepositioning equipment and supplies overseas, either on land or aboard ship, with the men to be airlifted in as needed. Although each of these approaches has its own advantages and disadvantages with respect to operational flexibility, foreign exchange costs, total manpower and equipment requirements, etc., the strategy of a mobile central reserve supported by an adequate lift capability and balanced prepositioning has long been accepted as the preferred alternative for meeting the rapid response objective.

During the past several years, the Defense Department has been embarked on a major effort to achieve the rapid deployment capability needed to support such a strategy. Now, we are buying a new transport, the C-5A, which will enable us to make another major improvement, both qualitative and quantitative, in our strategic airlift capacity. Thus, when our presently planned six squadrons of C-5A's are all in the force in fiscal year 1972, our airlift capacity will be more than 10 times what it was in fiscal year 1961.

Over the years, forward prepositioning of military materiel, especially heavy and bulky equipment, has grown in importance, partly because of the great increase in our ability to airlift forces and partly because of the emergency of new prepositioning concepts and equipment. The most important of these concepts has been the "forward floating depot" (FFD), in which balanced stocks of equipment and supplies are maintained on ships stationed overseas within a few days steaming distance of potential trouble spots, and thus very quickly available to "marry up" with airlifted forces from the central reserve. As a first generation "floating depot" system we planned to use old Victory-class ships, specially modified for this purpose. Three of these ships were actually deployed in fiscal year 1963 and we had planned to add more this year. However, the requirements of the conflict in southeast Asia have now caused us to defer this deployment for the time being.

Our future plans call for this first generation system to be replaced by a new class of ships, the FDL's, which are being specifically designed to support a rapid deployment strategy. Unlike the relatively slow (16 knots) and small payload (2,265 short tons) Victory ships, the FDL's will be fast, large payload (8-10,000 short tons) ships capable of rapidly delivering cargo either over the beach, using embarked lighters and helicopters, or at established ports. Because of these improvements, the FDL's will provide a wider range of operational flexibility than the Victory's. While we would probably always want to have some of them fully loaded and deployed forward, some of them could also be held partially loaded with ammunition and supplies but in a ready status in either U.S. or overseas ports where vehicles, helicopters, etc., tailored to the mission, could be placed on board quickly as the situation requires. This mode of operation which is feasible only because of the speed and efficiency of the FDL's would allow us to meet the desired rapid deployment schedules without immobilizing indefinitely large amounts of high cost equipment some of which also requires substantial continuing maintenance. In either mode of operation, however, the FDL's would have to be committed to the rapid deployment mission at all times and would not be available for regular point-to-point service. Thus while they will make an enormous contribution to our rapid deployment capability and will also be highly efficient carriers for resupply after the initial deployment phase, these FDL's in themselves do not provide the answer to the overall sealift problem.

Indeed, all of our study and experience shows that the requirement for sealift continues to grow after the initial buildup phase, as more forces are deployed and stocks of consumables have to be replaced. To meet this larger and longer term need, we must rely in large part on merchant shipping. Based on the transportation re-

quirements implicit in our contingency planning for a number of the most likely limited war situations, it appears that the equivalent of up to 460 general cargo ships (averaging 15,000 MT capacity, 15-knot speed) might be needed in a future emergency, over and above those available in our own Airlift/Sealift Forces. Simply in terms of size, the U.S. Flag Merchant Fleet (Active and Reserve) is adequate for such contingencies now, and should continue to be so in the future. The real problem, underscored by our recent experience in supporting our southeast Asia deployments, concerns the availability of these U.S. flag merchant ships to the Defense Department on a timely basis.

For the past year and a half, we have been engaged in a massive sealift of men and supplies to Vietnam. In the first quarter of fiscal year 1967, the Military Sea Transportation Service (MSTS) exceeded its fiscal year 1965 average quarterly shipping rate by 165 percent. However, only about a third of the increase was obtained from the U.S. liner fleet (both subsidized and unsubsidized). These, of course, were the ship operators who had been given preference in carrying peacetime Defense cargoes, who up until recently (when MSTS introduced competitive bidding) had collectively negotiated freight rates with MSTS, and on whom Defense had traditionally counted for the "hard core" of its sealift augmentation in wartime. But, when the heavy demands for sealift to southeast Asia began to develop, most of the liner operators chose to continue to ply their normal commercial trade routes, and in the July-September 1966 period only 8 percent of the subsidized fleet and something less than 10 percent of the non-subsidized liner fleet were under charter to MSTS. This choice was understandable under the circumstances. In a total war, neither the Government nor the shipline operators would have any choice, the ships would be requisitioned. But in a limited war, such as Vietnam, the issue is not as clear; the shipline operators, understandably, don't want to lose their place on the world trade routes and the Government doesn't want to be forced to requisition the ships it needs.

Fortunately, in the present situation, we have been able to obtain the needed sealift without recourse to requisitioning, principally through the use of the unsubsidized tramp fleet and through reactivations from the Reserve Fleet (NDRF). Almost two-thirds of the increase in Defense sealift capacity achieved since the start of the Vietnam buildup has come from these sources.

While these resources have successfully met the needs of the present emergency, they many not all be available in another emergency a decade hence. By 1975, most of the ships in the NDRF will be 30 to 35 years old and will require larger expenditures for conversion to assure satisfactory reliability. Moreover, the unsubsidized tramp/irregular fleet will probably have disappeared because its aging World War II vessels cannot be replaced at an economical price. As a result, the Defense Department may in another emergency be far more dependent on the subsidized berth line operators than it is today.

The greater requirement for berth line ships is disturbing not only because of the problem of responsiveness but also because of the cost implications involved. We know from past experience (and we cannot realistically expect it to be otherwise) that, unless the operators are assured a good profit (at prices established in a tight market), their ships will not be forthcoming voluntarily in an emer-

gency. This makes the subsidized liner fleet a very costly form of sealift for the Defense Department to hire, just when it needs it most.

Furthermore, U.S. flag ships are twice as expensive to operate, even in normal times, as most foreign flag ships. And, as I mentioned earlier, ship construction in U.S. yards costs about twice as much as that abroad. To offset these cost differentials, the U.S. Merchant Marine is subsidized by the taxpayer, directly and indirectly, to the tune of nearly three quarters of a billion dollars a year—on the premise that this shipping is required for potential national security needs. Yet, despite this large annual subsidy, virtually all our sealift needs since World War II have been met without requisitioning merchant ships. Moreover, it seems clear that the most likely requirements for sealift augmentation in the future will be associated with limited war situations like Vietnam, in which recourse to requisitioning will be as undesirable as it seems today.

In summary, from the viewpoint of the Defense Department, there is a firm requirement for reliable, responsive sealift augmentation for a wide range of limited war situations, a requirement which the present subsidized U.S. liner fleet, for various reasons, has not met. Various solutions have been suggested, ranging from a major increase in the subsidized U.S. flag merchant fleet to a full scale program of reserve fleet modernization. I do not propose to offer a solution at this time; other agencies of the Government are also involved. I believe a way can be found to revitalize both the American shipbuilding industry and the U.S. Merchant Marine and make them both more truly competitive in the world markets—and I believe that these objectives, along with our military requirements, can be met at costs lower than those our nation is incurring today.

AIRLIFT

The airlift forces currently planned through fiscal year 1972 are shown on the classified table provided to the committee. In the active forces, the C-5A deployment schedule is the same as that envisioned a year ago with the first two squadrons scheduled to become operational in fiscal year 1970. The first operational aircraft were included in the current year's procurement program and \$423 million is included in the fiscal year 1968 request for the next increment. The total C-5A program cost (including research and development and facilities construction) is estimated at \$3.4 billion.

Last year we had tentatively scheduled the phaseout of the C-133 fleet from the active forces in fiscal year 1971. However, in order to maintain the squadron integrity of the Military Airlift Command's force structure, we now plan to phase out the last two squadrons of C-133's as the last two C-5A squadrons become operational.

We also plan to retain one additional C-124 squadron (16 UE aircraft), previously scheduled to be phased out this year, through fiscal year 1968.

The C-141 force will reach its planned strength of 14 squadrons in fiscal year 1968 and is scheduled to hold at that level throughout the program period.

Before the end of fiscal year 1967, we plan to reorganize the existing C-130 fleet within a force structure of 28 squadrons rather than the 31 previously planned.

As a result of an Army-Air Force agreement in April 1966, which redelineated certain air support mission responsibilities within the combat theater, the Army's CV-2 Caribou transports (redesignated the C-7A) have now been transferred to Air Force operation and are therefore, accounted for in this program for the first time.

No major changes are contemplated in the airlift force structure of the Reserve components from that proposed a year ago. In fiscal year 1968, we proposed to continue one C-121 squadron and one more C-97 squadron than planned last year. Eventually, the Reserve airlift force will consist entirely of C-130's. During fiscal year 1968, we propose to continue the 100 percent manning for the 11 Air Force Reserve C-124 squadrons, which was inaugurated as a readiness measure in the summer of 1965.

SEALIFT

As discussed earlier in this section, we propose to build a fleet of fast deployment logistic (FDL) ships. The Congress approved funds (\$67.6 million) for two of these ships in fiscal year 1966, including \$10 million in the fiscal year 1966 supplemental for the initiation of contract definition. As I explained a year ago, actual contracts for these first two ships are being deferred in order to permit their inclusion in the "total package" contract. We now plan to award the multiyear contract late this fiscal year. Funds for five FDL's are included in the fiscal year 1968 request.

The FDL's we now propose will be considerably larger, faster, and more efficient ships than those we originally envisioned. Two years ago, the preliminary FDL concept called for a vessel capable of carrying about 5,600 tons of division equipment and supplies; the ships we are now considering will be able to carry perhaps twice that tonnage and at an estimated increase in the cost per ship of less than 10 percent.

As I noted earlier in the discussion of the shipbuilding problem, the FDL program represents the first application of the concept formulation and contract definition process and the "total package" approach to ship procurement. The first phase of this approach, "concept formulation," was completed in July 1966 when three contractors were awarded definition contracts. During the first phase of contract definition, the competing contractors prepared their initial proposals around Army and Navy performance requirements and standards instead of detailed ship specifications. Thus, for the first time, the talents of private industry are being brought to bear on the initial design of the ship. During the second phase of the definition process, which has just been completed, the three competing contractors prepared detailed proposals for their design and a comprehensive program plan for their production. As part of these detailed proposals, each of the contractors has developed plans for a new shipyard or modernization of an existing one. Any one of these, in terms of efficiency, would be far superior to the existing U.S. yards and in terms of design and layout would be equal to the best of the foreign yards.

We are now in the last stage of the definition process, i.e., bid evaluation and source selection.

The three Victory-class cargo ships which had been used as forward mobile depots since fiscal year 1963 have been temporarily converted

to point-to-point service in support of our current effort in southeast Asia. Our plans now call for retaining these ships in this role through the end of fiscal year 1968. Subsequently, with the end of the Vietnam conflict, we would expect to return them to their forward mobile depot role and add more ships for this mission. The Victory ship fleet would be retained until a sufficient number of the more efficient FDL's became available in fiscal year 1970.

During fiscal year 1966, MSTs operated in the nucleus fleet an additional general purpose cargo ship to help meet the increased requirements of our southeast Asia operation. Tentatively, we now plan on retaining this ship through fiscal year 1968, after which the active general purpose cargo fleet is scheduled to decline. Another minor change in last year's planned deployments resulted from the fact that one roll-on/roll-off ship which had been expected to enter service in May or June 1966 has been delayed.

With respect to special purpose cargo ships, the temporary Vietnam augmentations which I described a year ago have now been extended through fiscal year 1968. In addition, MSTs will operate 13 more LST's in fiscal year 1967 than envisioned last year and 1 more through fiscal year 1968. After fiscal year 1968, the special purpose cargo fleet is tentatively scheduled to return to the pre-Vietnam level.

FINANCIAL SUMMARY

The airlift and sealift forces outlined will require total obligational authority of \$1.6 billion in fiscal year 1968. A comparison with prior years is shown below:

[In billions of dollars]

	Fiscal years—						
	1962 actual	1963 actual	1964 actual	1965 actual	1966 actual	1967 esti- mated	1968 pro- posed
Total obligational authority.....	1.1	1.1	1.2	1.4	1.7	1.5	1.6

RESEARCH AND DEVELOPMENT

Included in this major program are all the research and development efforts not directly identified with weapons or weapon systems approved for deployment. We have made a special effort again this year not only to cull out marginal projects in the research and development programs, but also to defer to future years all projects whose postponement would not have a serious adverse effect on our future military capabilities. But even while we have eliminated, reduced and deferred projects in some areas of this program, we have had to add, increase and accelerate projects in other areas, to meet new needs growing out of the conflict in southeast Asia and the military situation generally.

Last year I described Project Provost (priority research and development objectives for Vietnam operations support) which we had established to ensure that the research and development program related to limited war situations, which had been accelerated in prior years, would be wholly responsive to the more specific requirements

of our forces in southeast Asia. As a result of Provost, projects totaling about \$370 million were identified as having significant potential for Vietnam operations and were singled out for priority funding in fiscal year 1966. During the past year, the test of combat in Vietnam has revealed a number of areas where still more effort appears warranted. These newly identified requirements have been an important influence in the formulation of our fiscal year 1968 request. However, most of this work should be started promptly, and thus also concerns the current year's research and development program. While a portion of it has been financed by reprogramming or use of emergency funds, we have had to request an additional \$135 million for research, development, test, and evaluation (R.D.T. and E.) in the fiscal year 1967 supplemental.

Broadly speaking, the projects funded in the supplemental can be grouped into three main categories. The first is concerned with improving the ability of our forces to fight at night. The second is concerned with reducing our aircraft losses. The third is concerned with the development of improved counterinfiltration systems. As described later, the proposed fiscal year 1968 program provides for additional effort in all of these areas.

Before I turn to the specifics of the fiscal year 1968 research and development program, there are two general areas which might usefully be discussed as entities rather than in terms of the separate projects which they comprise. These are nuclear testing and test detection, and space development projects.

NUCLEAR TESTING AND TEST DETECTION

As you know, the Defense Department, in cooperation with the Atomic Energy Commission (AEC), is maintaining four specific safeguards with relation to the Test Ban Treaty. For the Defense Department's portion of this program, we have budgeted a total of \$255 million for fiscal year 1968, compared with \$224 million in fiscal year 1967 and about \$238 million in fiscal year 1966, as shown on the classified table provided to the committee.

In support of the first safeguard—the underground test program—we have included \$49 million in the fiscal year 1968 budget, compared with the \$33 million provided in the fiscal year 1967 program.

In support of the second safeguard—maintenance of modern nuclear laboratory facilities and programs in theoretical and exploratory nuclear technology—our fiscal year 1968 budget includes \$63 million as compared with the \$53 million in fiscal year 1967.

The fiscal year 1968 budget includes about \$27 million in support of the third safeguard—the maintenance of a standby atmospheric test capability—about the same as fiscal year 1967.

In support of the fourth safeguard—the monitoring of Sino-Soviet nuclear activities—we have included a total of \$116 million in the fiscal year 1968 budget, compared with \$111 million in fiscal year 1967. We conduct two principal programs to support this safeguard—the Advanced Research Project Agency's Vela program and the Atomic energy detection system (AEDS).

The fiscal year 1968 budget includes \$50 million for Vela activities.

The present atomic energy detection system (AEDS), designed to detect and identify nuclear detonations, now represents a facilities investment of about \$85 million.

About \$58 million was provided in the fiscal year 1964-67 budgets for this effort and \$16 million is included in the fiscal year 1968 request. An additional \$46 million will be needed in fiscal year 1968 for the R.D.T. & E. and operating costs of the system.

SPACE DEVELOPMENT PROJECTS

While the various elements of the Defense Department's space effort are spread, on a functional basis, throughout the program and budget structures, I believe this effort can be more meaningfully discussed as a separate entity.

The Defense Department's program is, of course, wholly integrated into the larger national space program, expenditures for which now total over \$7 billion a year. The Defense portion is designed to maximize the utilization of space technologies and environments for defense purposes, e.g., to apply space technologies and capabilities to our strategic and tactical weapon systems to increase their effectiveness, to exploit the new potentials in information systems made possible by satellite-based communications and sensors, and to explore the usefulness of manned space systems for defense purposes.

In total, about \$1,998 million of our fiscal year 1968 budget request is for the space program, \$328 million more than in fiscal year 1967.

Spacecraft mission projects

By far the largest project in this category is the Manned Orbiting Laboratory (MOL), for which we are requesting \$431 million in fiscal year 1968.

A total of \$83 million is requested in fiscal year 1968 to continue work on Defense satellite communications programs and to procure, operate and maintain satellite communications equipment.

Of the \$83 million requested for satellite communications programs in fiscal year 1968, about \$17 million is for the development, procurement and operation of Army ground terminals; \$13 million is for Navy shipboard terminals; and \$49 million is for Air Force space subsystems, airborne terminals, launch vehicles, and the costs of procuring and launching new satellites. In addition, \$3 million is for the Defense Communications Agency for overall systems engineering and management direction.

I have already discussed the next item, "Nuclear test detection (Vela)," in connection with the Test Ban Treaty safeguards. The fiscal year 1968 budget includes about \$8 million for this program.

We are requesting \$18 million for the Navy's satellite navigational system.

Research and development funding for the antisatellite system program has been completed. The funds requested for fiscal year 1968 will provide for the normal operating costs of the system.

The funds requested for space "Geodesy" will support programs by each of the services as well as the Department of Defense's participation in the national geodetic satellite program. * * *

Vehicle, engine and component developments

The Titan III family of space boosters has begun to enter the operational inventory. The first Titan IIIB (Agena configuration) was launched last July and production is now proceeding. The Titan IIIC has been in the flight test phase since June 1965 and is

being used to launch the initial defense communications satellite, Vela, tactical communications satellite, and multiple engineering payloads.

The funds requested for "Agena D" will continue work being initiated this year to increase the capability of the standard Agena D for the heavier satellite payloads now projected.

The funds requested for "Spacecraft technology and advanced reentry tests (START)" will complete the present phase of this program.

The funds requested for "Advanced space guidance" will support an ongoing program of studies, experiments and equipment development in such areas as long-term accuracy and reliability of inertial guidance components, horizon sensors and star and landmark trackers, and on-board determination of astronomical data for autonomous navigation. The fiscal year 1968 program includes procurement of an inertial reference unit (which will serve as an instrumentation standard for the sensors) and other navigation components, which will then be flight tested.

The "large solid propellant motor" project was undertaken to create the technology base required for the development of missile or launch vehicle engines up to 156 inches in diameter. Funds already provided will be sufficient to complete the remaining tasks, i.e., demonstrations of a low cost nozzle, an advanced thrust vector control system, and a self-eject launch concept.

The next item, "Advanced liquid rocket technology" comprises three projects: advanced storable liquid rocket technology; high performance, cryogenic liquid rocket technology; and maneuverable space rocket technology.

Other Defense activities supporting the space program

The ground support category shown on the classified table supplied the committee is that portion of the costs of the missile range, test instrumentation, and satellite detection and tracking systems which is charged to space activities. The largest item in this category is the \$132 million for the Eastern Test Range.

The fiscal year 1968 request includes \$34 million for support of Spacetrack and \$5 million more for SPASUR, for a total of \$39 million.

The \$57 million requested for the "satellite control facility" is for operation, maintenance, and modification of the military space vehicle support network which provides satellite tracking, command and data handling, as required by the major Defense space programs.

The last two categories on the table, "Supporting research and development" and "General support," constitute the overhead of the military space program and consist of prorated portions of the costs of a wide range of space-related activities.

RESEARCH

Last year I discussed in considerable detail the problems involved in organizing and managing a research program consisting of literally thousands of individual tasks and projects, most of which require relatively small amounts of money for their support. I pointed out that because of the large number and relatively small dollar value of these projects, we had to manage the program from my office on a

"level of effort" basis, with the objective of advancing our knowledge in a balanced manner across the entire spectrum of science and technology pertinent to the Defense effort. To facilitate the management of the program and to insure that it is always responsive to changes in our fields of interest, I noted that we had organized the overall effort primarily in terms of disciplines, i.e., materials, general physics, chemistry, oceanography, etc., and that the effort in each discipline was allocated among the components of the Department on the basis of their primary fields of interest and competency.

Show on figure 6 is the research program proposed for fiscal year 1968, compared with prior years. You will notice that there is a sharp reduction in the amount of funds allocated to materials research and to a lesser extent for in-house laboratory independent research. In both cases, the amounts of unobligated and unexpended funds exceeded the levels dictated by prudent management. Accordingly, the amount of new funds requested for fiscal year 1968 has been reduced below the actual program levels which will be about the same as in fiscal year 1967.

FIGURE 6

Summary of the research program

[TOA, in millions of dollars]

	Fiscal year—						
	1962	1963	1964	1965	1966	1967	1968
Engineering sciences:							
Electronics.....			26	27	28	28	27
Materials.....			34	44	45	47	33
Mechanics.....			25	26	29	29	28
Energy conversion.....			12	14	14	15	14
Subtotal.....			97	111	116	119	102
Physical sciences:							
General physics.....			28	30	33	30	30
Nuclear physics.....			15	17	15	16	13
Chemistry.....			10	11	11	11	11
Mathematical sciences.....			33	35	37	38	37
Subtotal.....			86	93	96	95	91
Environmental sciences:							
Terrestrial.....			6	6	7	6	6
Atmospheric.....			19	20	19	21	22
Astronomy-astronautics.....			8	9	10	10	9
Oceanography.....			18	19	19	20	22
Subtotal.....			51	54	55	57	59
Biological and medical sciences.....			34	33	33	34	32
Behavioral and social sciences.....			9	10	12	13	12
Nuclear weapons effects research.....			36	38	39	41	43
In-House independent laboratory research.....			35	39	35	36	34
University program (THEMIS).....						18	27
Other support.....				8	7	7	8
Total research.....	339	351	346	383	391	415	409

¹ Amounts will not necessarily add to totals due to rounding.

Included in the fiscal year 1968 request for research is \$27 million for the Defense Department's share of the national program for developing new centers of excellence in science and technology. This program, previously referred to as the "university program" and now called THEMIS, is in addition to our regular contract/grant arrangements with institutions of higher learning and is not a substitute for

them. Rather, the new program is designed to create, eventually, about 100 new departmental centers of superior scientific and engineering competence at universities which are, at present, poorly supported. Patterned after the joint services electronics program, from which significant technical advances like the laser evolved, this new effort holds great promise of yielding a similar "payoff" in the future.

We have initiated Project THEMIS this year at a level of \$18 million, and have supplied interested colleges and universities with detailed information on our requirements. Additional centers will be started in fiscal year 1968.

EXPLORATORY DEVELOPMENT

Exploratory development is directed toward the expansion of technological knowledge and its exploitation in the form of materials, components, and devices which it is hoped will have some useful application to new military weapons and equipment. Here the emphasis is on invention and on exploring the feasibility of various approaches to the solution of specific problems, up to the point of demonstrating feasibility with a "bread board" device and even, in some cases, prototype components and subsystems. Along with research, exploratory development forms the technological pool from which future equipment will be designed.

The more than 800 individual exploratory development projects represent about 15 percent of the cost of the entire R.D.T. & E. program, with the average project requiring about \$1.3 million annually. About 40 percent of exploratory development work is conducted by our in-house laboratories, 50 percent is contracted to industry, and the remaining 10 percent is performed by educational and nonprofit institutions. A recent study of the origin of weapon system performance improvements has shown that almost all have resulted from Defense supported technological advances and very little from other sources.

As shown on the classified table provided to the committee, we are requesting a total of \$988 million for exploratory development in fiscal year 1968, \$65 million less than the revised estimate for fiscal year 1967.

Army

For the Army's exploratory development program, \$216 million is requested for fiscal year 1968, somewhat less than the level planned for fiscal year 1967.

In the areas of electronics and communications, the development effort includes: small rugged field operated digital data processing equipment; communications equipment having increased traffic handling and improved antijamming capabilities; devices for rapid, positive, and automatic recognition and identification among friendly surface units and between them and their supporting air units; new sensors for airborne and ground surveillance and target acquisition of enemy units on the battlefield; communication sets and variable time fuzes; night vision devices; improved solid state, thermionic, and frequency control components common to a variety of equipments; etc. Efforts in the ordnance category include work on weapon systems for Army helicopters, the improvement of missile components,

and development of conventional ammunition, weapons, and explosives.

In the materials category, the Army is concerned with the development of new metals, ceramics, plastics, and composite materials which can improve its firepower, mobility, armor, and communications, with particular emphasis on high strength, lightweight materials for use in the field.

Navy

The Navy's exploratory development effort in fiscal year 1968 will require \$272 million, compared with \$283 million now estimated for fiscal year 1967. Approximately one-third of the Navy's program is devoted to improving the design of ships, aircraft and other "sea-based" warfare systems, including: higher performance, lower cost nuclear propulsion systems for surface ships and submarines; sea-based countermeasures to help protect ships against mines, torpedoes, air-to-surface missiles, and nuclear attack; and better shipboard radar and sonar equipment to improve target acquisition, surveillance, and navigation. A large number of projects are directed toward developing new or improved materials, equipment, and designs for ships; in the past, these efforts have produced the "captured air bubble" craft, hydrofoil craft, and ship hulls for penetrating heavy ice formations.

Another large share of the Navy's program is concerned with electronics and communications, in particular with improving the performance and reliability of complex sea-based electronic systems which are subject to extreme variations in temperature, humidity and shock. New surveillance, navigation, and communications equipment for Navy aircraft is also of major interest.

A third major area, "Ordnance," comprises a large number of projects in such areas as antisubmarine warfare, mine warfare, air- and shipboard-launched ordnance as well as component work in propulsion, fuzes, explosives, pyrotechnics, ballistics, and infrared and laser devices.

Air Force

Previously the Air Force had budgeted separately for the supporting laboratory expenses associated with the exploratory development program. As part of an overall restructuring of its exploratory development program, these expenses have been prorated to the over 200 individual projects which the laboratories support. The other services have been prorating their laboratory costs for a number of years.

A portion of the Air Force's exploratory development program, for which \$285 million is requested in fiscal year 1968, will again be devoted to space investigations and space-related projects. Each of the categories, except for ordnance, includes some space-related projects. For example, a large share of the funds for "Chemical technology" will be devoted to the development of propellants and propulsion systems for missiles and rockets, and hence for space boosters. "Aeronautics" includes projects which cover the entire speed/altitude regime from V/STOL flight to space and reentry technology. These projects are directed toward developing the technology and understanding for extending Air Force operations into new operational environments such as hypersonic flight, for improving the capabilities of present aircraft, and for reducing the cost of future aircraft developments.

As a part of the reorganization of the Air Force's exploratory development program a "Bioastronautics" category was created embracing the Air Force's effort in the life sciences, aviation medicine, and machine-environmental systems support for aircraft and space activities. The funds requested for this category will support the activities of the seven Aerospace Medical Division laboratories as well as development of the life-support systems for the Manned Orbiting Laboratory.

The closely related areas of communications, electronics and avionics account for about one-third of the Air Force's program, while only a relatively small effort is conducted in the area of conventional ordnance. With respect to "materials," the Air Force is exploring new composites having enhanced radiation and blast, and X-ray resistance; metals with improved strength and stiffness; and sealant and elastic materials formed from the new polymers.

Advanced Research Projects Agency (ARPA)

ARPA operates as a small research and development management team, supervising its service-conducted programs by overall financial control and technical direction. A total of \$215 million is included in the fiscal year 1968 budget for ARPA's projects in exploratory development, compared with \$231 million in fiscal year 1967 and \$225 million in fiscal year 1966.

Project Defender. The Defender program is the principal exploratory development effort designed specifically to provide the missile and reentry technology associated with strategic defensive and offensive systems, and to develop concepts for advanced defensive systems against ballistic missile attacks. In fiscal year 1968, a substantial portion of the \$118 million requested for this project will be devoted to missile reentry and midcourse phenomenology.

Project Vela. Project Vela has already been discussed in connection with the test ban safeguards program. For fiscal year 1968, \$50 million is requested, slightly more than in the current fiscal year.

Project Agile. For fiscal year 1968, \$27 million is requested for Project Agile, about the same as fiscal year 1967. This is our basic research and development effort oriented to the special problems of remote area conflict with particular reference to the requirements of insurgency warfare.

ADVANCED DEVELOPMENT

This category includes projects which have advanced to a point where the development of experimental hardware for technical or operational demonstration is required prior to the determination of whether the item should be designed or engineered for eventual service use. In contrast to engineering development where design specifications are employed, advanced development permits the use of performance specifications which allow the engineer greater latitude in meeting operational needs, thereby encouraging innovation. A total of \$1,250 million is requested for advanced development in fiscal year 1968 compared with \$922 million in fiscal year 1967 and \$807 million in fiscal year 1966. The sharp increase in fiscal year 1968 reflects the growth of a few major projects, most notably MOL.

V/STOL developments

The first two items under Army "Advanced development" are related to the Defense Department's total V/STOL effort in which all

three military departments are participants. For a number of years, the Department has been developing a variety of vertical and short takeoff and landing (V/STOL) aircraft. This program has focused on the construction of prototype aircraft suitable for operational testing by all three services. The present status of this program is recapitulated below:

The XC-142A, a tilt-wing turboprop transport with a cruise speed of 250 knots, a combat radius of 200 nautical miles, and a 4-ton payload, has been undergoing technical and operational evaluation by a triservice test group with some participation by NASA and the FAA. The \$3 million requested for "Triservice V/STOL" in fiscal year 1968 (under Air Force advanced developments) should complete funding of the test program. These aircraft are approaching their maximum safe life of 300 flight hours and costly life extension modifications would not be warranted.

The X-22, a Navy monitored triservice V/STOL research and development project, is a twin tandem, tilting-duct, fan-powered flight vehicle, which closely simulates the characteristics of conventional aircraft and was designed to provide technical data on stability and control criteria for V/STOL aircraft generally. The \$2 million in the fiscal year 1967 budget will be sufficient to complete the presently scheduled DOD test program for the X-22. The remaining aircraft may then be turned over to NASA for further testing.

The XV-6A (P-1127) is a British designed, lightweight V/STOL strike-reconnaissance aircraft, first flown in October 1960. A total of nine test aircraft were constructed under a joint program with the United Kingdom and Germany. The tripartite evaluation of the aircraft was terminated in 1965, although the United States continued to conduct operational tests of its six aircraft until July 1966. Two of these aircraft have been turned over to NASA while the other four will be held by the Air Force pending evaluation of further testing proposals.

Two XV-4A's, an augmented jet lift aircraft, were tested by the Army until May 1965. One aircraft was lost during the testing period and the other, which was turned over to the Air Force, will be modified with direct lift and diverted thrust engines and designated the XV-4B. It is to be utilized in the Air Force's VTOL integrated flight control program.

The second of two XV-5A's, an experimental fan-in-wing aircraft, crashed last September while being operationally evaluated as a rescue aircraft. (The first crashed in April 1965.) All of the remaining assets associated with the program have now been transferred to NASA.

Another V/STOL effort just getting underway is the joint development of a strike fighter aircraft with the Federal Republic of Germany. The \$3 million provided in fiscal year 1967 should complete the financing of the configuration (i.e., contract) definition phase. At present, this effort is directed to V/STOL technology rather than full scale engineering development. Each nation will make its own decision concerning production. Since a decision on prototype development cannot be made until we have thoroughly reviewed the configuration definition results

(now scheduled for completion in October 1967), no additional funds have been requested for fiscal year 1968, although they would be needed if the program were continued.

The Army's "new surveillance aircraft" project is now a continuing long-range study effort concerned with the determination of desirable characteristics of a reconnaissance and surveillance aircraft for the mid-1970's.

In summary, we are now coming to the close of the current phase of our V/STOL development effort. For this reason, our overall effort on V/STOL development will decline in fiscal year 1968, although the services will continue to reexamine the results of these programs and how these may be applied to future aircraft needs. In any event, it appears that a great deal of research and experimental work, particularly on propulsion systems, remains to be done before we will be ready to undertake full scale engineering development of a V/STOL aircraft. NASA, of course, will continue its research and development effort in the V/STOL area.

Army

I have already discussed the first two items on the Army's list of advanced developments, ("operational evaluation V/STOL" and "new surveillance aircraft"). No additional funding is needed for the third item, "heavy lift helicopter." This is the CH-54 "flying crane" which is now in operational use in Vietnam.

Funds are requested for the "research helicopter" in fiscal year 1968. The fiscal year 1968 funds will be used to build wind tunnels and dynamic scale models of the stowed- and tilt-rotor versions. The program is oriented primarily to the development of technology which will yield an efficient aircraft that will both hover and have a flight speed of about 400 knots.

The funds requested for "Aircraft suppressive fire systems" is for work on improved helicopter-borne weapons for our forces in Vietnam, including evaluation of various fire control systems, guns, missiles and rockets. About half the funds will be used for feasibility demonstrations of presently available missiles and rockets, and most of the balance on advanced fire control systems and optical sighting devices.

The next item, "Automatic data system/Army in the field," covers the development of electronic data processing (EDP) equipment needed to help maintain and analyze data for the field commander regarding the current tactical status of his own and enemy units and of his various tactical plans and alternatives. Contracts for initial equipment have been awarded and the Army plans to begin field experiments with the 7th Army in Europe.

The SAM-D, for which funds are requested in fiscal year 1968, is an advanced surface-to-air missile system previously mentioned in connection with both the Strategic and General Purpose Forces. SAM-D is now in contract definition phase which will be completed this spring. We will then have to decide whether to proceed directly with development of an integrated system suitable for direct operational deployment, to limit development to a prototype system for feasibility demonstration, or to return to concept formulation. The second option would provide additional time to incorporate still more advanced technology and lead to demonstration tests. The first option would lead to full service tests. The funds requested will support any

option. The major remaining task is to integrate into a working model a number of components, the feasibility of which has already been verified on an individual basis. The SAM-D program is closely related to the Navy's advanced surface-to-air missile system program and the development of the respective subsystems and components is being fully coordinated by the two Services.

The \$6 million of "DOD satellite communication, ground" covers the Army's portion of the Defense satellite communications programs, which were discussed earlier.

The \$20 million requested for "Nike-X advanced developments" will finance development of those advanced components whose lead times would not permit their incorporation in an early deployment of the system. This work fills the gap between the engineering development effort and the development of completely new hardware for possible use later.

The \$5 million requested for "antitank weapons" will provide for the evaluation of new antitank missile concepts. Present efforts are directed toward identifying those system characteristics which together seem to offer the best chance of achieving an effective low cost antitank weapon.

The funds requested for the "lightweight howitzer" will support the development of a 155 mm. self-propelled weapon. Development of the system is being coordinated within NATO, with the United States, France, Germany, and Canada all participating in designing the ammunition.

The "Limited War Laboratory," for which \$7 million is requested in fiscal year 1968, is the Army's quick reaction research and development facility for counterinsurgency operations.

The "therapeutic developments" program was initiated in calendar year 1965 in response to the drug-resistant falciparum malaria which was causing such a serious problem for our forces in southeast Asia. The \$11 million requested will continue the development and testing of new anti-malarial drugs.

The next item, \$12 million for "Power system converters," consists of four major categories of projects directed toward the development of engines, transmissions, final drives, and related components for combat and tactical vehicles. These categories are: power conversion for track and wheel vehicles; multifuel, variable compression engines; spark ignition engines; and rotary combined cycle power systems.

The funding requested for "Night vision" reflects the increasing importance of night operations in modern warfare. Among the many types of equipment now under development are starlight scopes, small portable radars and special goggles.

The last item on the Army's list, "Airborne surveillance and target acquisition," is also in large part concerned with the problems of night operations. One of the major efforts in this program is aimed at providing a better night reconnaissance capability.

Navy

The first item on the Navy's list, "V/STOL development," represents the Navy's current participation in the triservice V/STOL program previously described.

The next item, "Airborne electronic warfare equipment," for which funds are requested, is a multiproject effort aimed at developing

active (jamming) and passive (signal interception) electronic warfare equipment required by the Navy.

The "advanced surface-to-air missile system (ASMS)" is the new automated integrated air defense system being developed as a possible replacement for the Terrier-Tartar-Talos (3-T) systems. As mentioned previously, we are seeking in this development to maximize the use of the technology, components, and subsystems, developed for the Army's SAM-D system. As a result, the ASMS program must lag behind the SAM-D development by about 1 year. With the completion of SAM-D contract definition in this fiscal year, we will be able to decide which elements should be used on both systems. This will allow us to initiate ASMS contract definitions by late fiscal year 1968.

The funds requested for the advanced point defense surface missile system (advanced PDSMS) program will support the development of a replacement for the basic point defense system (modified Sparrow III) now being deployed. This development is being closely coordinated with the Army's advanced forward area air defense system (AFAADS) program to maximize the common use of technology and components. The funds requested will support contract definition of the advanced PDSMS in fiscal year 1968.

The funds requested for "advanced ARM technology" will support preliminary development work on advanced antiradiation missiles.

The funds requested for the "Landing force support weapon (LFSW)" will complete feasibility testing of the Army Lance missile adapted to a sea-borne role for support of amphibious assault operations.

The "augmented thrust propulsion" program, for which funds are requested in fiscal year 1968, seeks to advance propulsion technologies for both strategic and tactical missiles in order to increase payload and/or range.

Grouped under "Astronautics" are several Navy programs, which I described earlier, relating to satellite communications and the potential use of navigation satellites by the tactical forces. We are requesting a total of \$6 million for these programs in fiscal year 1968.

The next group of items under Navy advanced developments are concerned with antisubmarine warfare (ASW) and the deep submergence program. The fiscal year 1968 budget includes a total of \$356 million for ASW R.D.T. & E., \$126 million in advanced developments.

The first item, "Advanced undersea surveillance", includes three ASW surveillance projects.

The next two items involve the development of new sonars. The first, the "Advanced submarine sonar" program, consists of three efforts: a new submarine sonar, investigations in submarine acoustic communications, and the testing of a sonar for deep-diving auxiliary submarines. The advanced surface sonar program provides for the development of a passive/active sonar to detect, localize, classify, and track submarines (PAD LOC).

The next item, \$42 million for the "Deep submergence program", is one of the more important efforts in terms of its potential impact on future Navy programs. This program consists of three separate but closely interrelated projects: the deep submergence system

project (DSSP), deep research vehicles (DRV), and deep ocean technology (DOT).

No further funding is requested for the "combined gas turbine propulsion" program, pending further study of the results achieved to date.

The "active PLANAR array sonar" is concerned with the development of an experimental integrated ship sonar system.

The "ASW/ship integrated combat system" consists of two efforts: ASW command and control, and ASW integrated combat system (ICS).

The next item, \$13 million for "Reactor propulsion plants," will consist of three concurrent efforts in fiscal year 1968: the development of a "natural circulation" powerplant, a small combatant ship reactor, and a more powerful reactor for use in aircraft carriers.

The "advanced surface craft" consists of advanced development projects for three different types of surface ships, for which a total of \$10 million is requested in fiscal year 1968. The first effort, "surface effect craft" (e.g., air cushion vehicles and captured air bubble ships), is to acquire the technology and design capability needed to build large high-speed "surface effects" ships. In the second effort, "hydrofoil craft", we have built a 110-ton, 45-knot patrol craft (PCH) and have a 300-ton, 50-knot hydrofoil auxiliary ship (AGEH) over 90 percent complete. The third effort, "landing craft", is concerned with the development and test of high speed amphibious and assault landing craft concepts.

Air Force

The first five items on the Air Force list of advanced developments are all part of the V/STOL technology program which was discussed earlier.

Last year, we programed \$3 million for fiscal year 1967 to support preliminary work on a new "V/STOL assault transport." We have reconsidered the requirement for this type of aircraft and decided that it is premature to settle now on a specific design. Therefore, the project has been renamed "Light Intertheater Transport" and will be concerned with the development of a new aircraft to replace eventually the CV-2 (Caribou) and similar small transports. The \$2 million requested in fiscal year 1968 will be used for preliminary study of possible designs including V/STOL aircraft.

The fiscal year 1967 funds for "V/STOL aircraft technology" will, as previously described, support contract definition of a new V/STOL fighter aircraft, a project jointly financed with the Federal Republic of Germany.

No further funding is required for the next item, "Lightweight turbojet," which was principally concerned with demonstrating light turbine engines for V/STOL aircraft.

The \$3 million requested for "Tri-service V/STOL" development will continue operational testing of the XC-142A aircraft, as I noted earlier.

The next item, \$20 million for "V/STOL engine development," will provide for the continued work on two engines, a direct-lift engine and a lift/cruise engine or for forward propulsion. . . .

The next two items, "Overland radar" and "AWACS," were mentioned previously in connection with their potential application to

future continental defense against bomber attack. The funds requested for the "Overland radar" program in fiscal year 1968 will support continued flight testing of radar techniques for detecting and tracking airborne targets over land in the presence of severe ground clutter and provide for development of components for still more advanced radars for future generation air early warning systems. No additional funding is requested for AWACS in fiscal year 1968 inasmuch as the radar evaluation is not yet far enough along to warrant going forward with contract definition during fiscal year 1968. However, funds will be available to support continued concept formulation of the "AWACS" system and contract definition if progress on the program indicates this as the logical next step.

The next item, "Advanced avionics," is concerned with improving the night and bad weather attack capabilities of tactical aircraft. Work will be conducted on visual sensors, weapons delivery subsystems, navigation equipment (doppler, inertial, loran), and an integrated radome-radar for reconnaissance fighters.

The funds requested for "Penetration aids for tactical fighters" will support continued work on devices and techniques for existing tactical aircraft to enable them to operate successfully in hostile radar-controlled gun and surface-to-air missile environments.

The funds requested for "Tactical air-to-ground missile (Maverick)" would support contract definition and initiation of engineering development in fiscal year 1968 of a new TV-guided air-to-surface missile.

For "Conventional weapons" development, \$5 million is requested in fiscal year 1968. These funds will finance a number of projects designed to demonstrate the technical feasibility of advanced conventional munitions and air delivery systems, various carriage and release mechanisms, fuzing technology, etc.

The \$8 million requested for "Flight vehicle subsystems" in fiscal year 1968 will support advanced development effort in two areas vital to future aircraft design. The first project consists of collecting and analyzing air turbulence data with the objective of improving the design of aircraft structures and control equipment. The second project is concerned with demonstrating the ability of current flight control technology to reduce the effects of wind gusts, aircraft maneuvers, etc., particularly in low-level flight, in order to increase structural life and crew efficiency.

The \$8 million for "Advanced ASM technology" will support a program designed to provide a technical foundation for new and improved tactical air-to-surface missile guidance systems. The largest single project involves a new approach to the all-weather guidance problem.

The \$3 million requested for the "X-15 research aircraft" program will complete in fiscal year 1968 all of the Defense Department sponsored experiments now planned. Subsequently, NASA will assume full responsibility for funding the X-15 test program.

The next item, "AMSA" will require \$26 million in fiscal year 1968. (The \$11.8 million added by the Congress for fiscal year 1967 will be applied to the fiscal year 1968 program). In fiscal year 1968, we plan to carry on development of an engine that could be used in this and other advanced aircraft. Additional funds will be required for

system integration of the avionics and to allow the airframe contractors to accommodate their designs to the engine developments.

The \$8 million requested for "Advanced filaments and composites" will support further work in developing new high strength, lightweight materials for use in aerospace structural and propulsion systems.

The next item, "Advanced ICBM technology," has now been reoriented from a "general" technology effort to the specific support of projects most likely to aid in the selection of subsystems for the possible new ICBM discussed earlier.

No additional funding in fiscal year 1968 is requested for the next item, "Stellar inertial guidance." The Pace II, a highly precise inertial navigator developed with prior year funds, is now in its evaluation phase which is expected to extend into fiscal year 1968. After review of these test results, future followup efforts will be determined.

A number of the other Air Force advanced development items are space projects which I discussed earlier.

ENGINEERING DEVELOPMENT

This category includes those projects being engineered for service use, but which have not yet been approved for production and deployment.

Army

A total of \$422 million has been included in the fiscal year 1968 budget to continue development of the Nike-X on a high priority basis, as discussed in Strategic Forces section of this statement.

One of the Army's major research and development program objectives is to have a number of ground force weapon systems in various stages of development at all times. The next item, "Firepower other than missiles," for which \$49 million is requested, constitutes the bulk of the Army's effort in this area and is divided into three main categories: "Individual and supporting weapons"; "field artillery weapons, munitions and equipment"; and "nuclear munitions."

The largest project in the first category is the medium antitank weapon (MAAW), a shoulder-fired 14.5-pound missile (28 pounds including launcher) with a shaped charge warhead. Other projects in the individual and supporting weapons category include a series of new ordnance signaling devices which are being engineered in response to southeast Asia requirements and a new vehicle rapid fire weapon system, to replace the cal. 50 machine gun and the interim HS-820 20 mm. cannon.

The "Field artillery weapons, munitions, and equipment" category encompasses the development of sophisticated conventional munitions and the resolution of ammunition problems associated with southeast Asia.

The "Nuclear munitions" category covers the development of Army supplied components for nuclear projectiles and atomic demolition munitions. Present efforts are being directed toward an advanced firing device for demolition munitions, and fuzes and cases for an improved 155 mm. artillery round.

The "Aircraft suppressive fire support system" project, for which \$14 million is requested in fiscal year 1968 is concerned with the development and adaptation of weapon subsystem for Army aircraft.

"Other airmobility projects," for which \$6 million is requested, includes work on aircraft engines, lightweight aircraft armor, and aerial delivery equipment.

The next item, \$9 million for "Surface mobility," comprises three efforts: "wheeled vehicles," "tracked special vehicles," and "marine craft." The major project in the first category will be the initiation of engineering development for the new 1½-ton XM-705 truck as an ultimate replacement for the current M-37 truck in rear areas. The major project in the second category will be a new armored reconnaissance vehicle capable of operations in adverse terrain and the "mechanized infantry combat vehicle-70," a replacement for the current personnel carrier. The third category includes work on shallow draft boats, a beach discharge lighter, etc.

The \$14 million for "Combat surveillance and target acquisition" provides for a number of projects. The largest is the TACFIRE system in which automatic data processing and display techniques will be used to improve the accuracy, response time and overall effectiveness of field artillery firepower. Contract definition will begin this year, with initiation of engineering development scheduled to take place next fall. Other projects include: improved sensors for the detection and location of enemy personnel, vehicles and weapons on the battlefield; airborne sensors for visual target location; a forward-looking infrared set for helicopters; image interpretation and photo processing equipment, etc.

The \$21 million for "Communications and electronics" provides for a broad based program to improve the Army's communication, avionics and electronic warfare equipment.

Navy

The first item on the Navy's list of engineering developments is the "Medium range air-to-surface missile (Condor)".

The funds requested for the "Advanced Sparrow" will substantially complete this development.

The next item, "Three-T systems improvements," consists of the engineering work necessary to support the updating of the three-T missiles (Tartar, Terrier, Talos) through the development of replacement components designed to increase the performance of these systems. The \$7 million requested for fiscal year 1968 will support development of improved components for the Talos system's radar.

The \$8 million requested for "Unguided/conventional air launched weapons" will support engineering development of a number of munitions projects: Snakeye II, a second generation retarded bomb; Fireye, an improved fire bomb using new napalm mixes and improved igniters; a hypervelocity tactical aerial rocket; an improved 20 mm. general purpose projectile, etc.

The next item for which we are requesting funds in fiscal year 1968, "Multimission tactical fighter (VFAX)," is for concept formulation of an advanced fighter aircraft. Since both the Navy and the Air Force may require such a fighter, we are examining the feasibility of a joint development program. Both services would use a power plant employing the lift/cruise engine technology.

The next five items on the list are all related to undersea warfare (USW), and total \$76 million for fiscal year 1968.

The largest single dollar item in fiscal year 1968 will be the "ASW aircraft development (VSX)". The funding level proposed will support continued concept formulation and development of long leadtime components of this system in fiscal year 1968.

The next item, the "MK-48 Torpedo," is designed for use by both submarines and surface ships. The MK-48 is already under contract.

The funds requested for the "Directional Jezebel" will complete the development funding of a sonobuoy capable of providing the bearing of a target directly to ASW aircraft.

The "Other undersea warfare projects" for which \$19 million is requested, include, for example, a shipboard periscope detection radar, the development of antenna systems integrated into the submarine's superstructure, etc.

The "Carrier based airborne tactical control system (CBATCS)" is designed to provide a major performance improvement over the present system now carried by the E-2A.

The \$14 million requested for "Marine Corps developments", will support a number of projects on electronic systems, weapons and vehicles for the Marine Corps. Included in this program are the Marine Corps' portion of joint-service research projects such as the medium and heavy assault antitank weapons (MAAW and TOW), which were mentioned earlier in connection with the Army's research and development program. Another project is the development of a new landing force assault amphibian vehicle, with equally good heavy surf capabilities but better land performance than present vehicles. In the area of electronics, the overall objective is more reliable and lighter-weight equipment, e.g., a new lightweight battlefield mortar locator being developed jointly with the Army. Other projects include an automated system for integrating air support activities into the Marine Corps tactical data system; improved nuclear, biological and chemical hazard detection equipment; and a semiautomatic electronic switching facility for use by tactical units in southeast Asia-type environments—all of which are being developed jointly with one or more other services.

Air Force

Many of the Air Force's engineering developments have already been discussed in connection with other programs.

The XB-70 test program has been continued following the accident last June, using the one remaining aircraft. We believe that all of the truly important objectives of this test program can be accomplished with presently available funds and no further financing is requested for fiscal year 1968.

Development funding for the next item, the "J-58 engine," was completed in the fiscal year 1967 budget.

The \$20 million shown for the next item, "Interceptor/fire control system/missile," will support redesign and engineering work on the AWG-9 fire control system and the AIM-47 folding fin missile, provide funds for the reconfiguration of the YF-12 test aircraft for use as a test bed for these systems, and continue studies on the possible use of the F-111 or F-12 airframes as a basis for the next generation of inter-

ceptor aircraft. (The fire control system and missile system work would be applicable to either.)

The next item, "F-4 improvements," reflects the cost of developing the internal 20-mm. nose gun for the F-4E. This gun is currently undergoing testing and no additional funds are requested for fiscal year 1968.

The \$33 million requested for "Mark II avionics" will substantially complete the funding of this follow-on to the F-111A's current avionics suit. A modified version of the Mark II will be incorporated in the FB-111.

The funds requested for the "Advanced tactical fighter (FX)," will support continued concept formulation studies on a new air superiority aircraft for possible introduction into the force in the mid-1970's.

We are requesting funds for "Advanced ballistic missile reentry systems," which comprises a wide variety of efforts to provide new reentry vehicle technology for our strategic missiles and to improve our defense penetration techniques.

The \$8 million requested for "Nike targets" will provide launch site support at Vandenberg AFB for ABM targets launched into the Kwajalein area, and for certain Air Force modification development work on the target vehicles.

The funds requested for the next item, "Advanced ICBM," would, as mentioned in the discussion of our Strategic Forces, permit initiation of contract definition for a new strategic missile system in fiscal year 1968, if that proves to be desirable.

The funds requested for the "Adverse weather aerial delivery system" will further develop components designed to give airlift aircraft the capability to navigate to, and air drop personnel and materiel at, specific locations in bad weather or at night without external ground based assistance.

The remaining engineering development items on the Air Force list have all been discussed in connection with the Department's space-related projects.

MANAGEMENT AND SUPPORT

Army

The fiscal year 1968 budget includes \$90 million for the support of the White Sands Missile Range. Test programs are conducted at this range for all the services and NASA. Among the specific projects are the Air Force's advanced ballistic reentry system (ABRES), the Navy's new antiradiation missile (based on the standard SAM missile), the Army's Lance, as well as NASA's Aerobee project. A major effort at this facility is the range instrumentation program, now in its third year, which will refine the data collected on the range, improve the data reduction capability, and augment the range communication system.

We are also requesting \$44 million for the Kwajalein Test Site, operated by the Army.

The \$229 million requested for general support covers the costs of all Army research and development installations and activities other than White Sands and Kwajalein.

Navy

The Pacific Missile Range, for which \$68 million is requested in fiscal year 1968, is responsible for range scheduling, communications, weather and meteorological services, and data reduction in support of assigned missile and space launch operations in the Pacific.

The Atlantic Undersea Test Evaluation Center (AUTEC), located in a deep-sea canyon off the Bahamas, will consist of three separate test ranges for weapons, sonars and acoustic systems. The weapons range became operational October 1966; the acoustic and sonar ranges are scheduled for completion during fiscal year 1967 and fiscal year 1970, respectively. For AUTEC, \$18 million is requested in fiscal year 1968.

General support for other Navy research and development laboratories and test facilities not chargeable to specific programs will require \$310 million in fiscal year 1968.

Air Force

For the Eastern Test Range, \$219 million is requested in fiscal year 1968, approximately \$13 million less than for the current fiscal year. Future test activities will involve greater accuracies, larger payloads, and more complex reentry vehicles as well as more sophisticated missions. To meet these more demanding requirements, the funds included in the fiscal year 1968 request will provide a capability for collecting improved trajectory evaluation data on new frequencies. The program will also provide for the operation of eight specially instrumented C-135 aircraft to support the activities associated with the Apollo programs.

About \$89 million is requested for fiscal year 1968 to support the Air Force Western Test Range which consists of a complex of range-instrumentation networks supporting Air Force, Navy, and NASA launches from Vandenberg AFB, Point Arguello, and Point Mugu. The program also provides for the operation of five Apollo support ships.

General support, including "Development support," will require \$65 million in fiscal year 1968. This item carries the major support of the Air Force Systems Command and its nationwide complex of research, development, and test installations, the construction of additional research and development facilities, and other support programs. It includes about \$85 million for the cost of services provided under contract by organizations such as Rand Aerospace Corp., and the Lincoln Laboratory.

EMERGENCY FUND

For the Department of Defense emergency fund, we are requesting the appropriation of \$125 million and transfer authority of \$150 million, the same as the amounts provided for fiscal year 1967.

FINANCIAL SUMMARY

The research and development program, including the development of systems approved for deployment will require about \$8 billion in

new obligational authority for fiscal year 1968. A comparison with prior years is shown below:

[Billions of dollars]

	1962 actual	1963 actual	1964 actual	1965 actual	1966 actual	1967 esti- mated	1968 pro- posed
R. & D.—except systems approved for de- ployment.....	4.4	5.2	5.4	5.1	5.3	5.4	5.8
R. & D.—systems approved for deployment.....	2.5	2.5	2.3	1.9	2.2	2.3	2.4
Total R. & D.	6.9	7.7	7.7	7.0	7.5	7.7	8.2
Less support from other appropriations.....	—6	—6	—6	—5	—6	—5	—7
Total R.D.T. & E. (TOA).....	6.3	7.1	7.1	6.5	6.9	7.2	7.5
Less financing adjustment.....	—9	—1	—1	—	—2	—	—2
Total R.D.T. & E. (NOA).....	5.4	7.0	7.0	6.5	6.7	7.2	7.3

OTHER MAJOR PROGRAMS

In last year's reorganization of the 5-year defense program structure, we established four new major programs which, for purposes of this presentation, have been grouped together in this section.

SPECIALIZED ACTIVITIES

Specialized activities comprise those elements of the Defense program which are directly related to the missions of the combat forces in the Strategic, General Purpose, and Airlift/Sealift Forces programs, but which for purposes of management are more logically handled within the context of homogeneous functional groupings of similar or complementary activities.

National military command system

The National Military Command System (NMCS) is the primary subsystem of the Worldwide Military Command and Control System.

The NMCS comprises the National Military Command Center (NMCC) at the Pentagon, the Alternate National Military Command Center (ANMCC), the National Emergency Command Post Afloat (NECPA), the National Emergency Airborne Command Post (NEACP), and the various communications networks linking these command facilities, the unified and specified commands and service headquarters.

As part of our continuing effort to improve the NMCS, we have expanded the automatic data processing capability at the NMCC to handle the increased workload related to southeast Asia operations and to provide support for the newly created strategic mobility staff in the Office of the Joint Chiefs of Staff. The fiscal year 1968 budget request provides funds for the further improvement of the data processing system, the information displays, and the related facilities and equipment.

Communications

The communications category includes both the Defense Communications System (DCS) and certain non-DCS communications operated by the military departments.

Other specialized activities

The specialized activities program also includes the overseas administration and grant aid portions of the military assistance program, and such other mission-related activities as weather service, oceanography, aerospace rescue and recovery, etc.

Because the military assistance program is not included in the legislation being considered at this time, only the last category of activities will be discussed here.

Weather Service. The Air Force and Naval Weather Services collect, analyze, predict, and disseminate, globally, meteorological and geophysical information for the support of military operations, NASA's space program (including manned space vehicle reentries and recoveries), research and development missile test firings, and they conduct hurricane and typhoon tracking and forecasting, and collect nuclear debris air samples for the AEC in connection with the test ban treaty safeguards.

Oceanography. This category comprises the activities of the Navy's Oceanographic Office, Defense support of the National Oceanographic Data Center and their related research aircraft and survey ships. During the coming fiscal year, the Navy will significantly expand its oceanographic effort. For example, in the "broad ocean survey" program the range of data collected will be greatly increased.

At the end of fiscal year 1966, nine oceanographic research and survey ships (three manned by Navy crews and six operated by MSTs) and two environmental production research aircraft were employed in the program. Seven of these are converted World War II ships but the other two are new oceanographic survey ships (AGS's) which entered the force during fiscal year 1966. In fiscal year 1967 two more new ships—oceanographic research vessels (AGOR's)—will be commissioned, increasing the force to 11 ships and making possible an expansion of the program. The AGS funded in fiscal year 1967 should enter service in fiscal year 1969. No new ships are being requested in fiscal year 1968 for this "operational" program, although two oceanographic research ships are included in the budget for the research and development program with which this survey effort is closely integrated.

Air rescue and recovery. The air rescue and recovery program comprises the Air Force Aerospace Rescue and Recovery Service (ARRS), certain specialized forces of the Navy, and certain assigned forces of the Army and Marine Corps.

To provide increased aircrew recovery capability in southeast Asia, additional ARRS helicopters will be procured in fiscal year 1967 and fiscal year 1968.

Traffic control, approach, and landing system. The Traffic control approach and landing system (TRACALS) element encompasses those "common system" air traffic control facilities not provided by the Federal Aviation Agency.

There are two prominent current programs. The first, the AIMS program, is concerned with the addition of the air traffic control radar beacon system, which provides positive identification and location of aircraft to all air traffic control radar facilities. The second is concerned with the replacement of current VHF and UHF air-ground-air communications systems in order to meet the more stringent requirement of 50 kilocycle spacing between channels in

accordance with our agreements with other members of the International Civil Aviation Organization.

Nuclear weapons operations. This element covers the activities of the Defense Atomic Support Agency (DASA) which provides specialized staff assistance to the Secretary of Defense and the Joint Chiefs of Staff; operational, logistical and training support for the military services; liaison with the Atomic Energy Commission on weapons development and the planning and conduct of weapons effects tests; and management for the national atomic weapons stockpile. The nuclear weapons effects tests, themselves, as well as nuclear weapons research, are included in the research and development program and were discussed earlier. DASA's construction program for fiscal year 1968 includes further shoreline protection work at Johnston Island.

LOGISTIC SUPPORT

Logistic support comprises a wide variety of activities which cannot be readily allocated to other major programs or program elements. Included under this heading are the costs of moving passengers and carriers, the Military Sea Transportation Service, the Military Airlift Command and contract airlift; purchasing, storing, and inspecting materiel; those parts of the industrial preparedness program (e.g., the provision of new industrial facilities and the maintenance of reserve facilities and equipment) not identified with elements of other major programs; and the major overhaul and rebuild activities for items which are returned to a common stock and cannot, therefore, be related directly to specific military forces of weapon systems.

PERSONNEL SUPPORT

The personnel support program comprises the training, medical and other activities associated with personnel, except for those portions of such activities which are integral elements of another program.

Training

The Defense Department's training establishment constitutes a vast and varied system, including at least 83 major military installations, designed to meet not only peacetime needs for militarily trained manpower, but also to provide the potential for rapidly expanding this force in periods of mobilization. Our total capital investment in these facilities exceeds \$4.8 billion and annual operating costs run over \$1.5 billion. On the average, nearly one-fifth of the active force is assigned to these centers at all times, either as part of the permanent training staff or as trainees. The rising cost of training in the fiscal years 1966-68 period directly reflects the rapid buildup in the size of the military establishment.

Recruit training. Recruit training (i.e., "basic" or "boot camp" training) is given every new enlisted serviceman to facilitate the transition from civilian life, to inculcate necessary standards of conduct and discipline, to provide initial weapons training, to ensure adequate physical conditioning and to foster motivation and service esprit. In total, recruit training loads are expected to decline slightly in fiscal year 1968, following the rapid rise in fiscal years 1966-67. We now estimate that about 920,000 men will enter basic training

next year compared to about 995,000 now estimated for fiscal year 1967.

The fiscal year 1968 request includes funds for two major expansions of basic training facilities. The Air Force plans to add 5,400 additional barracks spaces at its Lackland Military Training Center in Texas and about \$17 million will be needed for this purpose in fiscal year 1968. Construction of a third Navy Recruit Training Center on the site of the former Orlando AFB in Florida (which was previously transferred to the Navy for use as a training devices center in 1964) was initially funded in the fiscal year 1967 budget and \$21 million more is requested in fiscal year 1968.

Technical training. The military services train enlisted personnel for about 1,500 separately identifiable occupational specialties.

Professional training. Professional training encompasses primarily postgraduate level education in military and civilian schools, including medical training.

Among the military schools are the several service command and staff colleges, the service war colleges and the joint service colleges. Each year, over 4,000 students, including foreign military officers and U.S. Government civilians, are educated at these institutions.

Flight training. Flight training is the most expensive type of instruction given by the Defense Department, in large part because of the very heavy investments required in trainer aircraft and facilities. Three factors have now combined to compound our flight training problem: the large numbers of World War II trained pilots who are now coming to the close of their flying careers; the rotation requirements of the Vietnam conflict; and the rapidly increasing size of the Army's aviation program. To meet these increased pilot requirements, the fiscal year 1968 budget includes funds to increase the number of pilots being trained by the services to an annual rate of approximately 13,500. Actual pilot production will not reach the higher authorized levels in fiscal year 1968, however, since it takes up to 18 months to train a pilot.

In the Air Force, the planned annual output of pilots has been increased to 3,492 compared with 2,956 in fiscal year 1967 (including jet pilots trained for the military assistance program). To help handle this increased training load, a ninth undergraduate pilot training operation will be opened at Randolph AFB.

The new planned Navy annual pilot production rate is about 2,525 pilots (including 100 for the military assistance program and U.S. Coast Guard), compared with about 2,200 previously in fiscal year 1967. Of the 2,425 earmarked for the Navy and Marine Corps, about 945 will be trained for jet aircraft, 830 for propeller aircraft and 650 for helicopters.

The Army's planned pilot production has been increased to 7,500 pilots per year (including 180 for the military assistance program), compared with about 3,700 in the original fiscal year 1967 budget. About 90 percent of the new Army pilots will be trained for helicopters, up from about 50 percent in fiscal year 1966. The Army will commission about 75 percent of its new pilots as warrant officers since their positions do not involve command responsibilities. To help handle the larger training loads in fiscal year 1968, Hunter AFB in Georgia (which was scheduled to close in July 1967) has been assigned to the

Army and the present flight training program at Fort Wolters will be expanded.

To support the larger flight training programs, the revised fiscal year 1967 budget and fiscal year 1968 budget requests provide 582 trainer aircraft for the Army, 269 for the Navy, and 458 for the Air Force.

Service Academies. As you know, we have been increasing the level of enrollment at the Military Academy over the past few years toward an ultimate goal of over 4,000. In fiscal year 1968, enrollment will average about 3,300 cadets. To help accommodate the larger student body, the fiscal year 1968 budget includes funds for a new 66-classroom academic building at West Point and for personnel facilities and utilities.

Enrollment at the Naval Academy (currently the largest of the three service Academies) in fiscal year 1968 will remain constant at about 4,100. Construction funds, totaling \$3 million, are requested for the modernization of an academic building at Annapolis, and for additional personnel facilities.

The Air Force Academy, which has also been gradually building up the size of its student body to an ultimate level of 4,000, will reach a total of 3,100 cadets in fiscal year 1968. In addition, a cadet pilot indoctrination program, designed to encourage all physically qualified cadets to consider flight training upon graduation, will be instituted. About \$5 million is included in the fiscal year 1968 budget for construction of medical, training, and other facilities at the Air Force Academy in fiscal year 1968.

Medical services

Medical services include those costs for medical and dental services not directly associated with military units in our other major programs, the costs of medical care for military dependents at non-military facilities, the costs of providing veterinary services, and the cost of operating various health service activities such as the Armed Forces Institute of Pathology.

The fiscal year 1968 construction program for medical facilities totals \$161 million—the largest ever. It includes 27 new hospitals or additions to existing hospitals, together with a large number of other medical facilities.

TABLE 1.—*Department of Defense: Budget summary*

[In millions of dollars]

	Fiscal year 1966	Fiscal year 1967			Fiscal year 1968
		Basic	Supple- mentals	Total	
Total obligation authority:					
Military personnel.....	17,047	18,731	1,704	20,435	22,025
Operation and maintenance.....	15,378	15,712	3,562	19,274	19,154
Subtotal, operating.....	32,426	34,443	5,266	39,709	41,179
Procurement.....	22,595	18,080	6,306	24,386	24,013
Research, development, test and evaluation.....	6,940	7,042	135	7,177	7,523
Military construction.....	2,545	533	624	1,158	2,144
Family housing.....	682	519	11	530	823
Civil defense.....	105	102	-----	102	111
Special foreign currency program.....	-----	7	-----	7	16
Total, military functions.....	65,299	60,727	12,342	73,069	75,808
Military assistance.....	1,163	888	-----	888	621
Total, TOA.....	66,462	61,614	12,342	73,956	76,429
Less financing adjustments.....	-2,929	-1,676	-----	-1,676	-1,400
Plus NOA for revolving funds.....	-----	-----	535	535	241
New obligation authority.....	63,533	59,939	12,877	72,816	75,270
Expenditures.....	55,377	58,300	9,650	67,950	73,100

TABLE 2.—*Department of Defense: Summary of the fiscal year 1967 supplementals*

[In millions of dollars]

SOUTHEAST ASIA	
Military personnel.....	1,364
Operations and maintenance.....	3,311
Subtotal, operating.....	4,675
Procurement:	
Ammunition.....	677
Aircraft:	
Combat attrition.....	1,525
Training and other.....	439
Spares.....	996
Other aircraft equipment.....	775
Total aircraft.....	3,715
Vehicles.....	506
Electronics and communications.....	581
All other procurement.....	840
Total change in procurement program.....	6,317
Financing adjustments.....	-11
NOA for procurement.....	6,306
Research and development for limited war.....	135
Construction for southeast Asia.....	624
Increase in stock funds.....	535
Subtotal, SEA.....	12,276
OTHER	
Pay increase already voted:	
Military.....	340
Civilian.....	179
Medicare and homeowners assistance, already voted.....	82
Subtotal, amounts already voted.....	601
Total new obligational authority requested.....	12,877

TABLE 3.—*Department of Defense: Financial summary*
[Dollar amounts in billions]

	1961	1962 original	1962 final	1963	1964	1965	1966	1967			1968
								Enacted or author- ized ¹	SEA supple- ment	Total	
Strategic forces.....			\$11.2	\$10.5	\$9.3	\$7.1	\$6.8	\$6.7	\$0.4	\$7.1	\$8.1
General purpose forces.....			18.0	17.9	18.0	19.1	20.5	20.8	7.5	34.3	34.4
Specialized activities.....			3.0	3.7	3.9	4.2	4.7	4.7	.2	4.9	6.3
Airlift and sealift forces.....			1.1	1.1	1.2	1.4	1.7	1.1	.4	1.5	1.6
Reserve and guard forces.....			1.8	1.7	1.9	2.0	2.3	2.4	.2	2.6	2.8
Research and development.....			4.4	5.2	5.4	5.1	5.3	6.3	.1	5.4	6.8
Logistics.....			3.8	3.7	3.8	4.0	5.3	5.0	1.3	6.3	6.0
Personnel support.....			4.8	5.0	5.3	5.7	7.2	7.1	1.1	8.2	8.9
Administration.....			1.2	1.3	1.3	1.5	2.6	2.3	.7	3.0	3.1
Military assistance program.....			1.8	1.6	1.2	1.3	1.2	.9	---	.9	.6
Gross total obligatory authority.....			51.1	51.7	51.5	51.4	66.6	62.4	11.8	74.2	76.6
Less unfunded retirement pay.....			—, 5	—, 3	—, 3	—, 2	—, 1	—, 2	—, 1	—, 3	—, 2
Net total obligatory authority.....			50.6	51.3	51.2	51.2	66.5	62.2	11.7	74.0	76.4
Working capital.....	\$46.1	\$44.9	—, 4	—, 4	—, 3	—, 2	—, 2	---	.5	.5	---
Other financing adjustments.....	—2.6	—1.0	—, 8	.2	---	—, 5	—2.9	—1.7	---	—1.7	—1.4
Total expenditures.....	43.1	43.7	40.4	51.1	50.9	50.5	63.5	60.5	12.3	72.8	75.3
New obligatory authority.....	44.7	44.7	48.2	50.0	51.2	47.4	55.4	58.9	9.1	68.0	73.1
Total expenditures.....			8.9	8.7	8.4	7.3	7.8	---	---	8.9	9.0
Expenditures as percent of GNP.....	8.8										
TOA by department and agency:											
Army.....			\$12.9	\$12.2	\$12.8	\$12.7	\$19.1	\$18.5	\$5.1	\$23.6	\$24.7
Naval Air Force.....			15.1	15.1	14.9	15.3	20.0	18.5	3.5	22.0	22.1
Naval Air Force.....			20.2	21.0	20.6	20.1	24.3	22.5	3.0	25.5	26.0
Defense agencies.....			.3	.9	1.1	1.1	1.3	1.4	.1	1.5	2.0
Defense family housing ²			.7	.5	.7	.7	.7	.5	---	.5	.8
Military assistance program.....			1.8	1.6	1.2	1.3	1.2	.9	---	.9	.6
Gross total obligatory authority ³			51.1	51.7	51.5	51.4	66.6	62.4	11.8	74.2	76.6

TABLE 4.—*Department of Defense: Direct budget plan (TOA), new obligatory authority, and expenditures, fiscal years 1966-68*

(In millions of dollars)

	Direct budget plan (TOA)			New obligatory authority			Expenditures		
	Fiscal year 1966	Fiscal year 1967	Fiscal year 1968	Fiscal year 1966	Fiscal year 1967	Fiscal year 1968	Fiscal year 1966	Fiscal year 1967	Fiscal year 1968
FUNCTIONAL CLASSIFICATION									
Military personnel:									
Active Forces.....	14,632	17,636	19,055	14,655	17,636	19,055	14,407	17,465	18,903
Reserve Forces.....	803	983	950	818	985	950	755	935	910
Retired pay.....	1,592	1,813	2,020	1,600	1,814	2,020	1,591	1,800	2,010
Total.....	17,047	20,435	22,025	17,073	20,435	22,025	16,753	20,200	21,823
Operation and maintenance.....	15,378	19,274	19,154	15,339	19,274	19,154	14,710	18,600	19,017
Subtotal, operating.....	32,426	39,709	41,179	32,412	39,709	41,179	31,463	38,800	40,840
Procurement.....	22,393	24,380	24,013	22,013	22,886	22,917	14,339	18,463	21,632
Research, development, test, and evaluation.....	6,946	7,177	7,333	6,746	7,181	7,273	6,269	6,700	7,200
Military construction.....	2,345	1,138	2,444	2,546	1,097	2,123	1,334	1,600	1,600
Family housing.....	682	530	533	693	518	647	570	582	582
Civil defense.....	103	102	111	107	101	111	86	97	100
Special foreign currency program.....	-----	7	16	-----	7	16	-----	9	9
Revolving and management funds.....	-----	-----	-----	-----	535	241	281	716	337
Total, military functions.....	65,299	73,009	75,808	62,510	72,034	74,674	54,409	66,950	72,300
Military assistance.....	1,163	888	621	1,023	782	596	963	1,000	800
Total, military functions and military assistance.....	66,462	73,896	76,429	63,533	72,816	175,270	55,377	67,950	73,100

DEPARTMENT OR AGENCY	18,548	22,920	23,018	17,402	22,989	23,029	14,832	21,108	23,372
Department of the Army-----	19,462	21,365	21,690	18,486	20,709	21,134	16,026	18,978	20,429
Department of the Navy-----	23,593	24,803	25,281	22,653	24,263	24,891	20,131	22,594	24,077
Defense Agencies/OSD-----	3,590	3,879	4,767	3,770	3,972	4,867	3,335	4,174	4,232
Civil Defense-----	105	102	111	107	101	111	86	97	100
Total, military functions-----	65,299	73,069	175,808	62,510	72,084	174,674	54,409	66,950	172,300
Military assistance-----	1,163	888	621	1,023	782	596	968	1,000	800
Total, military functions and military assistance-----	66,462	73,956	76,429	63,533	72,816	75,270	55,377	67,950	73,100

¹ Fiscal year 1968 includes amounts proposed for separate transmittal under proposed legislation not distributed by military department, as follows:

[Millions of dollars]

	TOA	NOA	Expenditures
Military personnel-----	24	24	23
Operation and maintenance-----	18	18	17
Total-----	42	42	40

NOTE.—Fiscal year 1967 NOA includes amounts proposed for separate transmittal: \$12,273,570,000 for southeast Asia support; \$340,130,000 for military pay increase; \$179,000,000 for civilian pay increase; \$71,000,000 for medicare benefits; and \$11,000,000 for homeowners assistance.

[illegible]

TABLE 5.—*Department of Defense—Direct budget plan (TOA), new obligatory authority, and expenditures, fiscal year 1966-68 by functional title and service—Continued*
[In millions of dollars]

Functional classification	Department of the Air Force			Defense agencies/OSI-Civil Defense			
	Fiscal year 1966	Fiscal year 1967 supplemental	Fiscal year 1967 total	Fiscal year 1966	Fiscal year 1967 supplemental	Fiscal year 1967 total	Fiscal year 1968
TOTAL OBLIGATIONAL AUTHORITY (TOA)							
Military Personnel:							
Active Forces.....	4,399	510	5,526				
Reserve Forces.....	137	3	155				
Retired pay.....				1,592	54	1,814	2,020
Total.....	5,075	413	5,681	1,592	34	1,814	2,020
Operation and Maintenance:	5,259	595	5,790	753	115	965	1,012
Subtotal, operating.....	10,334	1,109	11,471	2,345	149	1,779	3,032
Procurement:							
Aircraft.....	5,518	1,303	5,685				
Missiles.....	1,248	45	1,284				
Ships.....							
Tracked combat vehicles.....							
Ordnance vehicles, and replacement equipment.....	1,426	400	1,863				
Electronics and communications.....	1,487	44	1,391	1		5	1
Other procurement.....	446	33	545	30		39	37
Total.....	9,125	1,884	9,738	37		45	48
Research, development, test and evaluation:							
Military sciences.....	157		160	103		107	101
Aircraft.....	845		711	17		12	10
Missiles.....	759	10	802	123		114	118
Astronautics.....	1,025		918	4		4	3
Ships.....							
Ordnance vehicles, and related equipment.....							
Other equipment.....	314	23	308	343	22	243	234
Programwide management and support.....	241		208	4		11	12
Emergency fund.....						18	125
Total.....	3,339	33	3,168	501	22	508	602
Military construction:							
Active Forces.....	779	196	413	24		9	246
Reserve Forces.....	17		13				
Total.....	796	196	426	24		9	246

TABLE 6.—*Department of Defense: Estimated obligations and amounts available for obligation, general fund appropriations, fiscal year 1966-68*

[In millions of dollars]

Item	New obligational authority	Reimbursement	Total available for obligation	Obligations	Unobligated balance carried forward	Unobligated balance as percent of available
FISCAL YEAR 1966—ACTUAL						
Department of the Army.....	17,492	3,211	23,174	21,000	2,156	9.3
Department of the Navy.....	18,486	1,750	25,381	18,714	6,666	26.2
Department of the Air Force.....	22,655	1,520	27,432	23,009	4,421	16.1
Defense agencies, OSD.....	3,770	67	4,114	3,513	573	13.9
Civil defense.....	107	-----	130	90	39	30.0
Total, military functions.....	62,510	6,548	80,230	66,325	13,854	17.2
Military assistance.....	1,023	6	906	895	11	1.2
Total, military functions and military assistance.....	63,533	6,555	81,136	67,220	13,865	17.0
FISCAL YEAR 1967—ESTIMATED						
Department of the Army.....	22,638	3,339	28,240	25,901	2,339	8.2
Department of the Navy.....	20,632	1,584	28,908	23,615	5,288	18.2
Department of the Air Force.....	24,263	1,527	30,282	25,788	4,494	14.8
Defense agencies, OSD.....	3,855	77	4,315	3,994	320	7.4
Civil defense.....	101	-----	142	130	12	8.4
Total, military functions.....	71,499	6,527	91,881	79,427	12,454	13.5
Military assistance.....	728	10	743	733	10	1.3
Total, military functions and military assistance.....	72,227	6,537	92,624	80,160	12,464	13.4
FISCAL YEAR 1968—ESTIMATED						
Department of the Army.....	23,569	3,246	29,154	26,944	2,210	7.5
Department of the Navy.....	21,130	1,576	27,995	22,516	5,479	19.5
Department of the Air Force.....	24,847	1,000	30,341	26,080	4,262	14.0
Defense agencies, OSD.....	4,734	77	5,132	4,561	571	11.1
Civil defense.....	111	-----	123	118	5	4.0
Proposed legislation.....	42	-----	42	42	-----	-----
Total, military functions.....	74,433	5,900	92,787	80,261	12,526	13.4
Military assistance.....	536	10	556	546	10	1.7
Total, military functions and military assistance.....	74,969	5,910	93,343	80,807	12,536	13.4

NOTES

(1) The total available for obligation is the sum of (a) unobligated balances from the prior year (b) new obligational authority, (c) reimbursements, and (d) transfers between appropriations.

(2) In addition to obligations, the unobligated balance carried forward was reduced by \$51 million of expired obligating authority withdrawn.

TABLE 7.—*Department of Defense: Estimated expenditures and amounts available for expenditures, fiscal years 1966-68*

[Dollar amounts in millions]

Item	New obligational authority	Total available for expendi- ture	Expend- itures	Unex- pended balance carried forward	Unex- pended balance as percent of available
FISCAL YEAR 1966—ACTUAL					
Department of the Army.....	\$17,492	\$23,781	\$14,832	\$8,941	37.5
Department of the Navy.....	18,486	34,128	16,026	18,074	52.9
Department of the Air Force.....	22,655	32,419	20,131	12,316	37.9
Defense agencies/OSD.....	3,770	5,134	3,335	1,760	34.2
Civil defense.....	107	211	86	119	56.3
Total, military functions.....	62,510	95,673	54,409	41,210	43.0
Military assistance.....	1,023	2,799	968	1,831	65.4
Total, military functions and military as- sistance.....	63,533	98,472	55,377	43,041	43.7
FISCAL YEAR 1967—ESTIMATED					
Department of the Army.....	22,989	32,037	21,108	10,930	34.1
Department of the Navy.....	20,709	38,884	18,978	19,907	51.1
Department of the Air Force.....	24,263	36,571	22,594	13,977	38.2
Defense agencies OSD.....	3,972	5,532	4,174	1,358	24.5
Civil Defense.....	101	220	97	123	55.9
Total, military functions.....	72,034	113,244	66,950	46,294	40.8
Military assistance.....	782	2,613	1,000	1,613	61.7
Total, military functions and military as- sistance.....	72,816	115,856	67,950	47,906	41.3
FISCAL YEAR 1968—ESTIMATED					
Department of the Army.....	23,629	34,558	23,372	11,186	32.3
Department of the Navy.....	21,134	41,047	20,429	20,618	50.2
Department of the Air Force.....	24,891	38,862	24,077	14,785	38.0
Defense agencies OSD.....	4,867	6,225	4,282	1,943	31.2
Civil defense.....	111	234	100	134	57.2
Proposed legislation.....	42	42	40	2	4.7
Total, military functions.....	74,674	120,968	72,300	48,668	40.2
Military assistance.....	596	2,209	800	1,409	63.7
Total, military functions and military as- sistance.....	75,270	123,176	73,100	50,076	40.6

NOTES.—(1) The total available for expenditure is the sum of (a) unexpended balances from the prior year, (b) new obligational authority and (c) transfers between appropriations. Transfers, which total \$173,000,000 in fiscal year 1966; \$200,000,000 in fiscal year 1967; and \$6,000,000 in fiscal year 1968 are not shown in detail. (2) In addition to expenditures, the unexpended balance carried forward was reduced in fiscal year 1966 by \$54,000,000 of balances withdrawn.

TABLE 8.—*Department of Defense: Order of magnitude data on comparative new obligatory authority by functional title, fiscal years 1954-68*

FUNCTIONAL CLASSIFICATION															
	Fiscal year 1954	Fiscal year 1955	Fiscal year 1956	Fiscal year 1957	Fiscal year 1958	Fiscal year 1959	Fiscal year 1960	Fiscal year 1961	Fiscal year 1962	Fiscal year 1963	Fiscal year 1964	Fiscal year 1965	Fiscal year 1966	Fiscal year 1967	Fiscal year 1968
Military personnel:															
Active Forces.....	11,266	10,650	10,526	10,411	10,398	10,709	10,637	10,605	11,545	11,431	12,273	12,699	14,655	17,036	19,055
Reserve Forces.....	315	369	512	613	607	644	674	660	633	672	751	751	818	965	960
Retired Pay.....	387	424	405	515	557	610	715	790	920	1,026	1,228	1,399	1,000	1,814	2,021
Total.....	11,968	11,442	11,534	11,539	11,572	11,933	12,026	12,144	13,098	13,129	14,204	14,849	17,073	20,435	22,025
Operation and maintenance.....	9,462	8,270	8,768	9,734	10,221	10,187	10,317	10,702	11,759	11,496	11,705	12,603	15,339	19,274	19,154
Subtotal, operating.....	21,430	10,718	20,302	21,273	21,793	22,180	22,343	22,846	24,857	24,025	25,900	27,452	32,412	39,700	41,170
Procurement:															
Aircraft.....	5,041	4,922	6,923	6,559	5,945	6,157	5,929	4,908	5,646	5,882	5,640	5,962	9,354	9,529	8,721
Missiles.....	569	234	2,135	2,135	2,090	3,066	2,030	2,078	3,230	3,069	3,076	2,615	1,642	2,187	2,711
Ships.....	759	1,150	1,274	1,335	1,723	1,913	1,140	2,246	2,967	2,639	2,060	1,905	1,522	1,757	1,824
Tracked combat vehicles.....	(2)	(2)	(3)	(3)	(3)	(3)	(3)	(3)	(2)	(2)	(2)	211	435	429	430
Ordnance, vehicles, and related equipment.....	2,990	527	405	247	90	545	703	1,034	1,830	1,959	2,028	1,431	4,252	5,154	5,809
Electronics and communications.....	395	327	215	409	549	882	1,179	935	1,375	1,176	1,363	1,039	1,240	1,417	1,368
Other procurement.....	835	260	214	549	586	701	702	425	687	742	889	672	1,568	2,413	2,055
Total.....	10,588	7,420	9,795	11,294	10,983	14,394	11,701	11,716	15,746	16,667	15,645	13,836	20,013	22,886	22,917
Research, development, test, and evaluation.....	2,165	1,708	1,828	2,186	2,345	3,777	6,020	6,033	6,993	6,993	6,984	8,483	7,746	7,181	7,273
Military construction.....	308	882	2,012	1,915	2,065	1,385	1,364	1,061	972	1,204	949	1,049	2,666	1,097	1,123
Family housing.....	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Civil defense.....	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Special foreign currency program.....	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Revolving fund management funds.....	100	1,119	---	75	130	57	30	30	(3)	(3)	---	---	(3)	107	16
Subtotal, military functions, new obligations.....	34,590	30,847	33,937	36,742	37,337	41,703	41,058	41,686	48,234	50,204	50,243	49,557	62,510	72,034	74,674
Transfers from prior year balances.....	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total, military functions, new obligations.....	34,590	30,787	33,187	36,255	37,347	41,188	40,628	41,321	47,846	49,794	49,922	49,363	62,510	72,034	74,674
Military assistance.....	3,192	1,204	1,016	2,018	1,340	1,515	1,331	1,785	1,577	1,325	1,000	1,130	1,023	782	586
Total, military functions and military assistance.....	37,783	31,991	34,203	38,273	38,687	42,683	41,595	43,106	49,423	51,119	50,992	50,493	63,533	72,816	75,270

DEPARTMENT OR AGENCY	12,777	7,764	7,354	7,672	7,731	9,381	9,689	9,014	12,141	11,631	12,513	12,003	17,492	22,989	23,629
Department of the Army	9,612	16,221	9,648	10,220	10,506	11,820	11,270	12,431	14,757	15,286	14,899	14,845	18,486	20,709	21,134
Department of the Navy	11,411	12,137	15,517	17,687	17,732	18,713	18,496	17,884	19,513	20,179	19,446	19,219	22,655	24,263	24,891
Defense agencies, OSD	791	666	667	666	777	1,256	1,173	1,062	1,178	2,572	2,951	3,192	3,770	3,972	4,867
Civil defense									257	126	112	105	107	101	111
Total, military functions	34,500	30,787	33,187	36,255	36,747	41,168	40,628	41,321	47,846	49,794	49,922	49,363	62,510	72,034	74,674
Military assistance	3,192	1,204	1,016	2,018	1,340	1,515	1,331	1,785	1,577	1,325	1,000	1,130	1,023	782	596
Total, military functions and military assistance	37,783	31,991	34,203	38,273	38,087	42,683	41,959	43,106	49,423	51,119	50,922	50,493	63,533	72,816	75,270

¹ Fiscal year 1953 includes amounts proposed for separate transmittal under proposed legislation not disturbed by military department, as follows:

	Millions
Military personnel	\$24
Operation and maintenance	18
Total	42

² Amount included in entry for "Ordnance, vehicles, and related equipment."

³ Excludes authority in stock funds (10 U.S.C. 2210(b)) to incur reimbursable obligations in anticipation of reimbursable orders to be received in subsequent years. Such authority is included in the budget document presentation as "New obligational authority."

NOTE.—Amounts include estimated comparability adjustments not supportable by accounting records.

TABLE 9.—Department of Defense—Order of magnitude data on comparative expenditures by functional title, fiscal years 1954-1968
[Millions of dollars]

FUNCTIONAL CLASSIFICATION	Fiscal year 1954	Fiscal year 1955	Fiscal year 1956	Fiscal year 1957	Fiscal year 1958	Fiscal year 1959	Fiscal year 1960	Fiscal year 1961	Fiscal year 1962	Fiscal year 1963	Fiscal year 1964	Fiscal year 1965	Fiscal year 1966	Fiscal year 1967	Fiscal year 1968
Military personnel:															
Active Forces.....	10,963	10,643	10,665	10,384	10,441	10,545	10,390	10,651	11,530	11,386	12,312	12,662	14,407	17,465	18,903
Reserve Forces.....	293	341	439	514	608	615	654	648	607	590	674	725	755	935	910
Retired Pay.....	386	419	477	511	562	641	694	786	894	1,015	1,209	1,384	1,591	1,800	2,010
Total.....	11,643	11,403	11,582	11,409	11,611	11,801	11,738	12,085	13,032	13,000	14,195	14,771	16,763	20,200	21,823
Operation and maintenance.....	9,162	7,931	8,400	9,487	9,761	10,378	10,223	10,611	11,594	11,874	11,932	12,349	14,710	18,000	19,017
Subtotal, operating.....	20,805	19,334	19,982	20,896	21,372	22,170	21,901	22,696	24,026	24,874	26,127	27,120	31,463	38,800	40,840
Procurement:															
Aircraft.....	9,080	8,804	7,835	8,647	8,793	7,730	6,272	5,898	6,400	6,309	6,053	5,200	6,635	8,010	9,003
Missiles.....	417	604	1,005	1,855	2,434	3,337	3,027	2,972	3,442	3,817	3,577	2,096	2,069	2,090	2,213
Ships.....	905	944	858	842	1,105	1,491	1,744	1,801	1,906	2,522	2,078	1,713	1,470	1,450	1,575
Tracked combat vehicles.....	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
Ordnance, vehicles and related equipment.....	3,334	1,191	1,260	674	365	369	443	675	1,137	1,665	1,597	1,073	1,697	2,035	350
Electronics and communications.....	3,700	1,441	660	704	663	720	1,093	1,042	1,139	1,427	1,264	1,807	1,983	3,935	5,204
Other procurement.....	1,521	854	698	767	723	730	755	706	507	891	782	625	1,273	1,086	1,159
Total.....	15,597	12,838	12,227	13,488	14,083	14,409	13,334	13,095	14,532	16,632	15,351	11,839	14,339	18,465	21,682
Research, development, test, and evaluation.....	2,187	2,291	2,101	2,406	2,504	2,866	4,710	6,131	6,319	6,376	7,021	6,236	6,259	6,700	7,200
Military construction.....	1,744	1,715	2,079	1,968	1,753	1,945	1,626	1,605	1,347	1,144	1,060	1,007	1,334	1,800	1,600
Family housing.....															
Civil defense.....	-3	(3)	(3)	-1	(3)	(3)	(3)	(3)	90	427	107	93	86	570	582
Special foreign currency program.....															
Revolving and management funds.....															
Adjustment to budget basis.....															
Total, military functions.....	40,326	35,531	35,792	38,436	39,070	41,223	41,215	43,227	46,815	48,252	49,760	46,173	54,409	66,950	72,300
Military assistance.....	3,029	2,292	2,611	2,352	2,187	2,340	1,009	1,449	1,390	1,721	1,485	1,220	993	1,000	800
Total, military functions and military assistance.....	43,955	37,823	38,403	40,788	41,258	43,563	42,824	44,676	48,205	49,973	51,245	47,401	55,377	67,950	73,100

DEPARTMENT OR AGENCY	12,910	8,901	8,703	9,053	9,051	9,407	9,392	10,130	11,427	11,409	11,000	14,532	21,108	23,372
Department of the Army-----	11,290	9,732	9,744	10,397	10,913	11,720	11,642	12,214	13,260	14,005	13,399	16,026	18,978	20,429
Department of the Air Force-----	15,666	16,405	16,750	18,361	18,437	19,083	19,065	19,785	20,840	20,642	18,216	20,131	22,594	24,077
Defense agencies/OSD-----	464	494	596	615	669	953	1,115	1,098	1,198	1,905	2,865	3,335	4,174	4,282
Civil defense-----	-3	(¹)	(¹)	-1	(¹)	(¹)	(¹)	(¹)	90	203	93	86	97	100
Total, military functions-----	40,326	35,531	35,792	38,436	39,070	41,223	41,215	43,227	46,815	48,252	46,173	54,409	66,950	72,300
Military assistance-----	3,629	2,292	2,611	2,352	2,187	2,340	1,609	1,449	1,390	1,721	1,229	968	1,000	800
Total, military functions and military assistance-----	43,955	37,823	38,403	40,788	41,258	43,563	42,824	44,676	48,205	49,973	47,401	55,377	67,950	73,100

¹ Fiscal year 1963 includes amounts proposed for separate transmittal under proposed legislation not distributed by military department, as follows:

Military personnel-----	\$23,000,000
Operation and maintenance-----	17,000,000
Total-----	40,000,000

² Amount included in entry for "Ordnance, vehicles, and related equipment."
³ Less than \$5,000,000.

NOTE.—Amounts include estimated comparability adjustments not supportable by accounting records.

TABLE 10.—*Department of Defense—Financial summary of fiscal year 1967 budget, appropriations enacted and supplementals proposed*

[In thousands of dollars]

	Appropriations enacted	Transfers and adjustments	Military and civilian pay supplemental	"Medicare" and "Home-owners assistance" supplemental	SEA supplemental	Total
Military personnel:						
Military personnel, Army.....	6,164,400	4,164	78,500	-----	650,500	6,897,564
Military personnel, Navy.....	3,652,100	-4,164	77,700	-----	220,800	3,946,436
Military personnel, Marine Corps.....	1,183,200	-----	24,300	-----	58,400	1,265,900
Military personnel, Air Force.....	5,015,800	-----	106,300	-----	403,700	5,525,800
Reserve personnel, Army.....	288,211	-----	6,200	-----	14,900	309,311
Reserve personnel, Navy.....	112,500	-----	800	-----	-----	113,400
Reserve personnel, Marine Corps.....	36,500	-----	800	-----	-----	37,300
Reserve personnel, Air Force.....	69,700	-----	1,100	-----	-----	70,800
National Guard personnel, Army.....	346,533	-----	8,520	-----	15,280	370,333
National Guard personnel, Air Force.....	82,000	-----	1,910	-----	290	84,200
Retired pay, Defense.....	1,780,000	-----	34,000	-----	-----	1,814,000
Total, military personnel.....	18,731,044	-----	340,130	-----	1,363,870	20,435,044
Operation and maintenance:						
Operation and maintenance, Army.....	5,122,427	33,005	64,000	29,000	1,968,000	7,216,432
Operation and maintenance, Navy.....	3,980,300	-24,806	42,000	25,000	624,000	4,646,494
Operation and maintenance, Marine Corps.....	325,600	-48	2,300	-----	96,700	424,552
Operation and maintenance, Air Force.....	4,943,100	-1,823	49,000	17,000	528,000	5,535,277
Operation and maintenance, Defense agencies.....	806,500	2,517	20,300	-----	85,800	915,117
Operation and maintenance, Army National Guard.....	231,000	-----	-----	-----	-----	231,000
Operation and maintenance, Air National Guard.....	253,300	-----	1,400	-----	-----	254,700
National Board for Promotion of Rifle Practice, Army.....	494	-----	-----	-----	-----	494
Claims Defense.....	25,000	-----	-----	-----	9,000	34,000
Contingencies, Defense.....	15,030	-----	-----	-----	-----	15,000
Court of Military Appeals, Defense.....	600	-----	-----	-----	-----	600
Total, operation and maintenance.....	15,703,321	8,844	179,000	71,000	3,311,500	19,273,665
Procurement:						
Procurement of equipment and missiles, Army.....	3,483,300	-----	-----	-----	2,130,000	5,613,300
Procurement of aircraft and missiles, Navy.....	1,789,900	-58,000	-----	-----	1,752,000	3,483,900
Shipbuilding and conversion, Navy.....	1,756,700	-----	-----	-----	-----	1,756,700
Other procurement, Navy.....	1,908,300	-----	-----	-----	287,000	2,255,300
Procurement, Marine Corps.....	262,900	-----	-----	-----	253,000	515,900
Aircraft procurement, Air Force.....	4,017,300	-4,000	-----	-----	1,303,000	5,316,300
Missile procurement, Air Force.....	1,189,500	-----	-----	-----	45,000	1,234,500
Other procurement, Air Force.....	2,122,600	-----	-----	-----	536,000	2,658,600
Procurement, Defense agencies.....	51,300	-----	-----	-----	-----	51,300
Total, procurement.....	16,641,800	-62,000	-----	-----	6,306,000	22,885,800
Research, development, test, and evaluation:						
R.D.T. & E., Army.....	1,528,700	27,998	-----	-----	40,000	1,596,698
R.D.T. & E., Navy.....	1,758,600	115,436	-----	-----	40,000	1,914,036
R.D.T. & E., Air Force.....	3,112,600	23,151	-----	-----	33,000	3,168,751
R.D.T. & E., Defense agencies.....	459,050	1,781	-----	-----	22,000	482,840
Emergency fund, Defense.....	125,000	-108,803	-----	-----	-----	18,195
Total, R.D.T. & E.....	6,983,950	61,561	-----	-----	135,000	7,180,520
Military construction:						
Military construction, Army.....	114,014	-----	-----	-----	288,500	402,514
Military construction, Navy.....	126,918	-----	-----	-----	140,000	266,918
Military construction, Air Force.....	205,495	-----	-----	-----	196,000	401,495
Military construction, Defense agencies.....	7,547	440	-----	-----	-----	7,986
Military construction, Army Reserve.....	-----	-----	-----	-----	-----	-----
Military construction, Naval Reserve.....	5,400	-----	-----	-----	-----	5,400
Military construction, Air Force Reserve.....	3,600	-----	-----	-----	-----	3,600
Military construction, Army National Guard.....	-----	-----	-----	-----	-----	-----

TABLE 10.—*Department of Defense—Financial summary of fiscal year 1967 budget, appropriations enacted and supplementals proposed—Continued*

[In thousands of dollars]

	Appropriations enacted	Transfers and adjustments	Military and civilian pay supplemental	"Medicare" and "Homeowners assistance" supplemental	SEA supplemental	Total
Military construction—Continued						
Military construction, Air National Guard	9,400					9,400
Loran stations, Defense						
Total, military construction	472,374	440			624,500	1,097,314
Family housing:						
Family housing, Defense	507,196					507,196
Homeowners assistance, Defense				11,000		11,000
Civil defense:						
O. & M., civil defense	66,100	-1				66,099
Research, shelter survey and marking, civil defense	35,000					35,000
Construction of facilities, civil defense						
Total, civil defense	101,100	-1				101,099
Special foreign currency program	7,348					7,348
Revolving funds:						
Army stock fund					351,000	351,000
Navy stock fund					77,000	77,000
Defense stock fund					107,000	107,000
Total, revolving funds					535,000	535,000
Military functions, totals:						
Department of the Army	17,279,079	65,167	157,220	29,000	5,458,180	22,988,646
Department of the Navy	16,959,018	28,418	147,900	25,000	3,548,900	20,709,236
Department of the Air Force	21,024,395	17,328	159,710	17,000	3,044,990	24,263,423
Defense agencies, OSD	3,784,550	-102,069	54,300	11,000	223,800	3,971,581
Civil defense	101,100	-1				101,099
Total, military functions	59,148,142	8,842	519,130	82,000	12,275,870	72,033,984
Military assistance	792,000	-10,425				781,575
Total, new obligational authority, DOD	59,940,142	-1,583	519,130	82,000	12,275,870	72,815,559
Total expenditures, DOD	58,300,000		505,000	61,000	9,084,000	67,950,000

TABLE 11.—*Department of Defense: Net additions to the fiscal year 1967 procurement program for southeast Asia*

[Millions of dollars]

	Army	Navy and Marine Corps	Air Force	Total
Ammunition	309	89	279	677
Aircraft:				
Combat attrition	14	1,073	438	1,525
Training and other	258	135	46	439
Spares	149	314	533	996
Other aircraft equipment	169	329	257	755
Total aircraft	590	1,851	1,274	3,715
Vehicles	288	167	51	506
Electronics and communications	338	102	141	581
Other	607	131	110	1,848
Total changes in program (TOA)	2,130	2,340	1,855	6,317
Financing adjustments		-48	+29	-11
Fiscal year 1967 supplemental (NOA)	2,130	2,292	1,884	6,306

¹ Reflects \$8,000,000 reduction in procurement, defense agencies program.

TABLE 12.—*Department of Defense: Major procurement item quantities, fiscal year 1967 and 1968 programs*

[Millions of dollars]

	Fiscal year 1967 program			Fiscal year 1968 program
	Enacted funds	Supplemental	Total	
Aircraft:				
Army.....	\$1,807	\$890	\$2,697	\$1,479
Navy and Marine Corps.....	560	487	1,047	680
Air Force.....	821	207	1,028	1,250
Total, all services.....	3,188	1,584	4,772	3,409
Helicopters.....	1,903	863	2,766	1,588
Other aircraft.....	1,285	721	2,006	1,821
Total, all services.....	3,188	1,584	4,772	3,409
Missiles:				
Army.....	34,715		34,715	26,237
Navy and Marine Corps.....	6,172	1,992	8,164	12,815
Air Force.....	4,777		4,777	5,273
Total, missiles.....	45,664	1,992	47,656	44,325
Ships, Navy:				
New construction.....	57		57	34
Conversions.....	8		8	21
Total, ships.....	65		65	55
Tracked combat vehicles:				
Army.....	4,437	1,392	5,829	4,797
Marine Corps.....	144	7	151	
Total, tracked combat vehicles.....	4,581	1,399	5,980	4,797

TABLE 13.—*Department of Defense: Military and civilian personnel, yearend number*

	Fiscal year 1965 actual	Fiscal year 1966 actual	Fiscal year 1967 estimate	Fiscal year 1968 estimate
Military personnel:				
Army:				
Officers.....	111,541	117,205	142,837	154,900
Enlisted.....	854,755	1,079,525	1,308,453	1,362,004
Military Academy cadets.....	2,017	2,316	2,910	3,096
Total, Army.....	968,313	1,199,046	1,454,200	1,520,000
Navy:				
Officers.....	77,720	79,457	83,773	85,014
Enlisted.....	588,353	660,130	665,298	673,031
Naval Academy midshipmen.....	4,179	4,331	4,243	4,243
Aviation cadets.....	757	551	80	
Total, Navy.....	671,009	744,469	753,394	762,288
Marine Corps:				
Officers.....	17,234	20,485	24,193	25,211
Enlisted.....	172,638	240,909	255,831	269,316
Aviation cadets.....	315	293	600	387
Total, Marine Corps.....	190,187	261,687	280,624	294,914
Air Force:				
Officers.....	131,141	130,285	135,986	137,828
Enlisted.....	689,585	752,913	759,250	745,697
Air Force Academy cadets.....	2,907	3,152	3,364	3,575
Total, Air Force.....	823,633	886,350	898,600	887,100
Department of Defense, total:				
Officers.....	337,636	347,432	386,789	402,953
Enlisted.....	2,305,331	2,733,477	2,988,832	3,050,048
Academy cadets and midshipmen.....	9,103	9,799	10,517	10,914
Aviation cadets.....	1,072	844	680	387
Total, Defense.....	2,653,142	3,091,552	3,386,818	3,464,302
Civilian personnel:				
Army.....	332,875	371,121	426,164	431,474
Navy.....	333,271	356,744	398,608	410,787
Air Force.....	291,496	306,911	319,462	325,796
Defense agencies, OSD.....	42,278	68,923	72,361	72,057
Total, Defense.....	999,920	1,103,699	1,216,595	1,240,114

CONTRACT FUNDS STATUS REPORT APPROVED BY THE BUREAU OF THE BUDGET

During December 1966 the Bureau of the Budget (BOB) approved the quarterly contractor reporting requirements described by DOD Instruction 7800.7, "Contract Funds Status Report" (CFSR). BOB's approval followed extensive coordination between industry representatives and Defense officials.

DOD and industry have a mutual interest in information about funding. The DOD manager must assure the adequacy of the funds for varied Defense programs, and at the same time exercise administrative fund controls on appropriations required by public law. Industry, on the other hand, is vitally concerned about receiving timely payments in appropriate amounts. Funds reporting has evolved from the need to satisfy both needs.

The first effort for uniform application throughout DOD in this area occurred in 1959 with the development of the financial management report, DD 1097. This report was designed to be used essentially to assess potential expenditure levels. As expenditure restraints eased, it was adapted to answer funding status questions. This

report proved to be inadequate from both industry and DOD points of view. To overcome its deficiencies, individual report versions were designed by the military departments to provide their representatives with better information. These reports were limited to a small number of contractors, and thus, did not require BOB approval.

To curb the tendency toward proliferation of data gathering efforts on this subject, DOD in 1964 undertook to install a single uniform approach for DOD-wide use. The resulting contract funds status report was developed through continuous consultation with industry. These consultations started in 1964 as a part of the cost and economic information system (CEIS). During March 1966, industry, through the Council of Defense Space and Industry Associations (CODSIA), was provided a draft version of the CFSR reporting instruction. CODSIA comments and recommendations were received in May 1966, and a series of joint DOD-industry meetings was held in late summer to discuss the CODSIA recommendations. Many changes were made to the original proposal as a result of industry comments. CFSR has benefited from this exposure. It can become a useful, workable document that will serve the needs of both DOD and industry.

In gaining BOB approval, the CFSR joins the cost information reports (CIR) and the economic information system (EIS) as visible parts of the selected acquisitions information and management systems (SAIMS).

The CFSR is designed to supply the funding data that, with other performance measurement inputs, will provide information about Defense contracts to DOD managers for:

- Updating and forecasting contract fund requirements.

- Planning and decision making on funding changes in contracts.

- Developing fund requirements and budget estimates in support of approved programs.

The contractor compares current funding with estimated fund requirements and describes the relative firmness of requirements on which estimates are based. Reasons for changes in quantitative fund requirements are also to be submitted.

In view of the lead time required to adjust approved levels of funding when changes in estimated fund requirements are involved, reporting accurate information as early as possible is a matter of pronounced importance to the contracting parties (DOD and industry) who must use the information.

The CFSR will be implemented on all new contracts, which require funds status reporting, to replace reports such as the DD 1097, DD 1097 Addendum NAVWEPS 7810/4, and the contractor financial requirements estimate (CFRE). If suitable arrangements to incorporate this reporting requirement can be made, the current use of the aforementioned reports will be discontinued in existing contracts. The instructions (DOD Instruction 7800.7) include descriptions of data items which are the contractor's required input to the CFSR.

Questions concerning the implementation of CFSR should be referred to the Directorate for Assets Management Systems, Office of the Assistant Secretary of Defense (Comptroller), room 3B857, the Pentagon, Washington, D.C., 20301, telephone (202) OXford 7-7565.

Part II

ECONOMIC ANALYSIS OF IMPACT OF VIETNAM EXPENDITURES

This section consists of various papers, statements, and articles on aspects of the impact of Vietnam expenditures on the American economy. They are arranged in chronological order.

Several of the papers have been published subsequent to their original issue. The paper, "The Inflationary Impact of the Federal Budget," appears in the July-August 1966 issue of *The Financial Analysts Journal*. The paper, "The Outlook for Defense Spending—How Great an Uncertainty?," appears in the *1966 Proceedings of the Business and Economic Statistics Section, American Statistical Association*.

THE GUNS, BUTTER, AND THEN-SOME ECONOMY*

BY GILBERT BURCK

The United States could fight several Korean wars with just its annual increase in output; the Vietnam buildup, at its present pace, probably will not push the economy to capacity. But enlarged global responsibilities may raise future military spending.

Like the first surge of a rapidly rising river, the flow of U.S. materiel into South Vietnam has told the world that America is determined to lay out what it takes to hold the line in southeast Asia. Men and supplies, guns and ammunition, bulldozers and helicopters, and all the other military machinery provided by modern logistics have begun to inundate the little country as the United States consolidates its position in the grim business of war. Yet this war, like all wars, is more than a war. In the gigantic U.S. economy, upon which so much of the world depends, war is a powerful economic force. And it is not only a powerful force, but one that can be enlarged tremendously in a very short time. The war is also a force that is uncommonly volatile and unpredictable.

Because of Vietnam, the Nation is confronted with a wide variety of economic possibilities, diffused, overlapping and penetrable only by informed and careful speculation. The hope of many economists that military spending will rise just enough—but no more than enough—to take up the slack in the economy is a fragile one, already nearly squeezed to death by other more portentous possibilities. First and most immediate of them, so strong that it still amounts to a probability, is that despite the war the growth of U.S. output will slow down somewhat during the next 6 months. In that event, the United States could be in the odd position of fighting a difficult war while enjoying a sufficient surplus of resources to present it with something of a “peacetime” problem.

But other and opposite possibilities, though not imminent, are growing more minatory. Military men and their backers in Congress may wangle a big increase in military spending to compensate for what they regard as the penny pinching of Secretary McNamara's economy program; the cost of the Vietnam war may rise to much higher levels; general restlessness in Asia suggests that other Vietnams may break out without much warning; and the United States may soon embark on production of a whole new strategic weapon system, the Nike-X antimissile missile, which would soon begin to cost billions per year. And beyond that the United States may yet fall heir to most of the British commitment in the Far East. All these possibilities suggest that defense spending could later rise considerably higher than has been commonly expected. A combination of such possibilities, depending on when and how they arise, could conceivably

*Reprinted from *Fortune*, October 1965.

elevate military spending to the point where the Nation's resources would be hard pressed, where many Great Society programs would have to be shelved, where taxes would have to be raised, and even where wage and price controls would have to be invoked.

One great circumstance, however, should give U.S. citizens a large need of security. Barring Armageddon itself, the U.S. economy has grown so large that it can take on its world responsibilities with an astonishingly small percentage of its total effort. Just since the Korean war, the United States has added to its gross national product the equivalent of more than two-thirds of the total national production of the Soviet Union. The Nation's annual growth is now several times the annual military cost of fighting the Korean war, and its immense and growing armed power actually takes much less of its total output than it did a decade ago. The Russians are said to regard the invasion of Korea as the biggest postwar mistake of international communism because it touched off a major U.S. military buildup; for the same reason the Chinese Communists may some day regard Vietnam as a great error. Plainly the United States can maintain its might at a level sufficient for its aims and maintain it without straining its productiveness at all.

The U.S. economy should have enough excess capacity to accommodate next year's defense spending easily enough. Before the Vietnam buildup, many businessmen and a few economists believed that the great 56-month expansion would continue practically unabated through 1966. But many others, including *Fortune's* Business Roundup, argued that a slowdown of the growth rate was in the cards for next year, and believe a small one still is. This case rests on the argument that three sectors of the economy have expanded at a rate they cannot maintain: (1) consumer spending on goods has expanded a little too fast, partly because installment and mortgage credit have increased at a rate that cannot keep up; (2) inventory accumulation, owing mainly to hedging against a steel strike, has been excessive, and will probably be reduced severely; and (3) capital spending by manufacturers has been and still is rising so fast that it is bound to generate excess capacity. As all three slow down, they would tend to decelerate (not stop) the growth of the economy as a whole.

HOW MANY DEFENSE BILLIONS IN 1966?

At all events, the big question is how much and when military spending will boost business. The answer seems to be that although the plans for the buildup may give the economy a psychological lift, nothing that Vietnam will do to military spending over the next 6 months is likely to keep it growing at its recent rate of more than 4.5 percent a year. The Armed Forces, during the next 10 months or so, will be increased by some 376,000—340,000 military and 36,000 "direct hire" civilian personnel. President Johnson talked of sending only 125,000 men in all to South Vietnam, but extra Marines have already gone there, and the best unofficial estimates in Washington say that some 250,000 men will be landed before the end of fiscal 1966 (June 30). Although Johnson decided not to call up reserves, the Defense Department is taking appropriate steps to "maximize" their readiness.

Even before the manpower increases were announced last July, Defense Department spending had begun to turn up sharply from its

rather depressed level of early 1965. Although the Pentagon originally expected to spend \$51.2 billion in fiscal 1965, delays and economies in procurement resulting from Secretary McNamara's cost-cutting program kept actual outlays down to only \$47.4 billion, or \$1.6 billion less than the estimate for fiscal 1966. But last spring the Defense Department increased its spending steeply toward the budgeted level for 1966; and then, as the Vietnam "situation" worsened, it revised its goals sharply upward. Not only is Defense spending the \$49 billion it planned to spend last January, it has twice asked Congress for more. In May it got authority to spend an extra \$700 million, and in August it got its second "supplemental" of \$1.7 billion. It is also taking advantage of Section 512c of the appropriations act, which allows it to commit itself to outlays for operation, maintenance, and personnel—e.g., outfitting and training draftees—without prior appropriation by Congress.

Next January, Defense will again petition Congress for a large spending permit, partly to cover outlays made and planned under section 512c. This request will be for at least \$4 billion, possibly more than \$6 billion. Whatever its psychological impact, however, it will not result in \$5 billion or \$6 billion additional spending in the fiscal year ending June 30, 1966; contracts are still to be made, and the bills for many will not come due until fiscal 1967 or 1968. The Pentagon's actual increased spending in fiscal 1966 will include \$800 million to take care of the \$1 billion pay rise granted last August, about \$1 billion for added military personnel, and perhaps \$1.7 billion of the \$2.4 billion in "supplementals" it got last spring and summer. Thus outlays will probably total about \$3.5 billion above last winter's estimate, or \$52.5 billion in all. By late spring or early summer, of course, Defense will be spending at a higher *level*—say at an annual rate of about \$55 billion.

What the \$3.5 billion "extra" to be disbursed in fiscal 1966 does for the economy will depend on what it goes for. About half will be used for manpower increases—pay, uniforms, food, housing, etc. Since the Pentagon will add men to the forces at the rate of only 35,000 a month, the annual rate of outlays for them will not be attained at least until next summer. Thus the total cost for new military personnel, including the cost of clothing, housing, shipping, and paying combat rates to the men shipped to Vietnam, will probably come to no more than \$1 billion by July, 1966. The cost of ocean transportation is hard to estimate. No stepup for capital outlays is yet called for; Defense has chartered some 55 modern vessels, has taken over a score or so from the Maritime Administration's large reserve, and can get more where those came from. The United States needed 600 to 800 ships in the Korean fracas, but these figures provide little edification. A lot of men are now being flown to the Far East, and in any event the buildup is slow enough so that the present inventory of ships, including Navy-operated vessels, may be adequate.

To the extent that some men will eat better in the services than they did at home, food buying will be stimulated. If an employed youth is drafted and his job goes to an unemployed man, the economy is stimulated. But the difference between an unemployed man's income and a soldier's pay and upkeep may not be very great. There will be less Government spending on unemployment benefits and other Federal programs than there might have been. Other factors, includ-

ing psychological ones, may inhibit popular spending. Employed young men about to be drafted and older men awaiting a call from the reserves may not be inclined to go into debt to buy durables.

The other half of the increase in the Defense Department's present spending will have a somewhat more positive effect on business, for it will go mainly for construction, ammunition, ordnance, and aircraft. At least \$150 million is programed for construction in South Vietnam, much of it to make Camrauh Bay into a great port. A good deal of this money will be spent in South Vietnam, whence part of it (along with some troop pay) will find its way to France, still one of South Vietnam's big suppliers, and may there ironically add to the U.S. balance-of-payments problem. But outlays at home for ammunition and ordnance (not counting missiles), which exceeded \$1 billion in fiscal 1965, may more than double in fiscal 1966.

During the past few years Defense has been laying out between \$6 billion and \$7 billion annually on planes, and the caption on page 121, which describes some of the craft being bought or considered for Vietnam, suggests the figure will rise considerably. Except for helicopters, however, most planes on order or on the list will have a long lead time. Defense, for example, is expected to order some 60 of the new C5-A giant transport planes, and spend about \$2.2 billion on them. Deliveries will be spread over 5 or 6 years.

For all its impact, spending on ammunition, ordnance, and aircraft does not stimulate the economy as much as, say, a tax cut of comparable dimensions. When consumers are handed buying power in the form of a tax cut, their suppliers build up inventories to accommodate the new level of demand; the economy thus gets a double direct boost. It also gets an indirect boost when private capital is spent to expand factories and stores to take care of the new demand. But the Defense Department may supply a military contractor with machine tools from its stockpile, in which case the economy gets no stimulus, direct or indirect. Or Defense may advance him dollars in the form of progress payments to take care of working capital and equipment needs. In that event, the economy may get only a one-shot boost, for the contractors' suppliers are not likely to build up their stocks permanently until more orders come in.

All in all, to repeat, military spending as now scheduled may be insufficient, if a slowdown is in the cards, to keep the U.S. economy growing at its recent rate of about 4.5 percent a year (in constant dollars). Appropriately enough, the President's fiscal advisers, including the Council of Economic Advisers, are seriously discussing future tax cuts. "Indeed, we are still worried about slack in the economy," says one of the CEA staff members.

THE "SECRET" REPORT

The slack may be a short-lived worry. Next January the Defense Department will ask Congress for more supplemental appropriations and will make public its preliminary estimates of needs for fiscal 1967. Suppose it requests not \$5 billion or \$6 billion but \$10 billion or so more in supplementals, to be spent over a few years; and suppose it follows this with an estimate of more than \$55 billion for 1967. Such figures would almost surely portend average annual military outlays of around \$60 billion, or \$10 billion above the current level, perhaps

beginning in fiscal 1967. The prospect of \$60 billion a year, almost everybody agrees, would keep the economy at capacity and perhaps threaten to overheat it, especially since the Armed Forces would then be using up scarce manpower. Merely in anticipation of this level of spending, business would be less inclined to reduce excessive inventories, and more inclined to keep its capital spending high. Tax cuts would go out the window. There would be talk of inflation, of cuts in nondefense Government spending, of voluntary wage and price restraints, perhaps of controls.

One influence that may help convert such a possibility into actuality is a remarkable 100-page "secret" report put together under the auspices of the Preparedness Subcommittee of the highly regarded Senate Armed Services Committee. The report argues that even before the Vietnam buildup Defense should have been spending billions more a year for Army procurement. It points to shortages and obsolescence in radio, spotting, and warning equipment, and guidance and control systems; in trucks, troop carriers, and helicopters; in machinegun, antitank-gun, and rifle ammunition. The report also urges an immediate funding for new procurement, and estimates that the Army alone needs between \$12 billion and \$18 billion worth of additional equipment during the next 5 years. On the assumption that the other services have suffered similar underprocurement, many have estimated the total "shortfall" in terms of \$5 billion a year or so.

Senator John Stennis, of Mississippi, chairman of the subcommittee, admits there is no evidence of shortages in Vietnam; the so-called shortages one reads about there are generally a simple problem of transporting equipment to where it is needed. But Stennis argues that to keep forces in Vietnam well supplied the Army has had to strip assets and resources of the Reserves and active forces elsewhere. Hanson Baldwin, the well-informed military correspondent of the *New York Times*, has long criticized McNamara's lean budgets and recently let it be known that one of the reasons President Johnson did not call up the Reserves for Vietnam last July was that they lacked training and equipment. If true, this alone could presage a large increase in procurement.

McNamara naturally disagrees with the charges—stubbornly, sharply, and explicitly. He and his staff point out that the Armed Forces are in a much higher state of readiness than they were 5 years ago, "particularly in the kinds of forces we now require in southeast Asia," and they argue that the shortcomings cited in the report make little real sense. No army is ever completely modern, they say, nor does it want to be if production lines are to be kept open, and if large blocks of equipment are not to be out of date at once. Furthermore, they say, standards of logistic readiness cannot be used to measure combat readiness.

STEP-UP IN VIETNAM

But even by their own definition the time may be at hand to start producing for war. Georgia's Senator Richard Russell, chairman of the Armed Services Committee, is one important figure who seems to think so. He defines need as "everything on earth the American soldier can possibly need to fight a battle," and insists that Defense will have to spend much more. He has denounced a "casual attitude toward a situation that holds greater dangers than those inherent in

the Korean conflict," and forecasts that the war will have a big effect on the economy. For he sees as many as 300,000 topflight U.S. soldiers in South Vietnam, and is sure that Congress will vote the money even if the conflict costs upwards of \$10 billion a year more than it is expected to cost.

Whether and how much the action in Vietnam will be accelerated is a question that makes anything properly describable as calculation next to impossible. Some believe the conflict can be kept within limits. The failure of the Vietcong to take advantage of their big chance in the last monsoon season suggests that the United States can secure its bases and help enlarge the South Vietnamese area of control without enlarging its effort beyond present plans. But the war, as everyone is well aware, is being stepped up; and there are strong reasons for thinking the U.S. commitment will have to be increased further. If only as a matter of military economics, many argue, a combatant with the potential of the United States is bound to throw more and more power into the conflict, hoping to achieve its ends less expensively by achieving them sooner rather than later.

What is more to the point, both the strength and the resolution of the enemy are formidable. Some 250,000 Americans, as already noted, may well be sent to South Vietnam. But this may not be enough. Now the old notion that it takes 10 men to counteract one guerrilla, based on past wars including that of the British in Malaya, is no longer taken very seriously in an army whose firepower can be substituted for manpower. As McNamara himself has said again and again, a ratio of 3 to 1 may be too low, but a ratio of 10 to 1 is excessive. How do the figures stand?

It appears that the Vietcong number at least 65,000 hard-core guerrillas and anywhere from 85,000 to 135,000 part-timers, plus two regular North Vietnamese divisions: total 170,000 to 220,000. The South Vietnamese forces, everybody hopes, come to 600,000; add 250,000 Americans, and you have 850,000. This might amount to a ratio of 4 or 5 to 1.

This is only part of the story. The North Vietnamese "people's army" consists of 200,000 regulars and more than 250,000 semiregulars, reinforced by large reserves, a well-armed border police force, and hundreds of thousands of volunteers "ready to go." Bernard B. Fall, professor of international relations at Howard University and an old Vietnam hand from the days of the French defeat, holds that this force is one of the toughest, largest, most courageous, politically educated, and fanatically devoted armies in the world. He suggests it may move south to support the Vietcong, and also suggests that it might be supported, as it was against the French, by Chinese "volunteers" or Russian "technicians." A mass movement of North Vietnamese troops, of course, would make this a new war, and one made to order for U.S. firepower. Still, it would surely take more manpower. The possibility that another 250,000 U.S. troops may yet be moved to Vietnam, at a cost of \$5 billion or more a year, is manifestly not sheer speculative fantasy. "If we stay in, we must stay in with a hell of a lot of power," says Robert Lovett, Truman's Secretary of Defense. "You cannot skimp on power, and you cannot half fight a war. And no quartermaster was ever hanged for ordering too much of what's needed."

BILLIONS MORE TO GO

Other magnitudes of possible military spending, though not so immediate as Vietnam, are not so very distant either. This fall or winter, for example, the decision will be made on whether to produce the Nike-X, the great antiballistic-missile system. An article in *Fortune* next month will explore the uses of the Nike-X; suffice it to say here that, depending on what strategy is adopted, this weapon system can cost anywhere from \$8 billion to \$40 billion, starting with only \$250 million the first year but building up steeply over 7 or 8 years.

As the insane conflict between Pakistan and India illustrates so vividly, war and revolution are endemic in the Asian subcontinent, and nothing gratifies the Chinese Communists more than to see them flourishing. If Thailand is relatively secure, not so much perhaps can be said for its neighbors Laos and Cambodia. And over the longer run it looks as if the United States would wind up as the only Western Power with large international commitments—and additional billions in military and other spending. Britain, the only other Western Power extensively involved overseas, is increasingly restive under its load. The British defense budget is about \$6 billion, or 6.6 percent of GNP, almost as large a percentage as that of the United States. Worse, the country's still farflung military organization is responsible for about \$850 million or 77 percent of the U.K.'s \$1.1 billion (estimated) balance-of-payments deficit, the most important problem facing a nation that is living beyond its means in the sense that it cannot export enough to pay for its imports.

Defense Minister Denis Healey accordingly has announced an interim program for cutting the British defense budget by \$600 million or 10 percent, and warns that more reductions will be in order unless the country's balance of payments takes a quick and satisfactory turn for the better. The interim cost-reduction program is supposed to be achieved mainly by drastic economies that will not alter existing commitments. Up until recently British military accounting was practically nonexistent, but with the help of the Pentagon, the British military establishment is being McNamara-ized. The United States wants dearly to keep the British in the game, and not only because it doesn't want to be the only Western country policing the world. The British can play the game more cheaply than the United States; a good part of the British forces in Malaysia, for example, consist of low-paid Gurkha troops. And the continuing presence of the British is a stabilizing influence in countries where the sudden withdrawal of colonial rule has left people disoriented.

"WHAT ARE WE DOING THERE?"

Whether McNamara-izing the British military establishment will suffice to keep it in the game is another matter. Britain has already proposed reducing its military outlays in Germany. Now the question of whether its strongholds east of Suez are worth hanging on to is being debated. The British are spending about 20 percent of their defense budget east of Suez, and committing a third of their purely military strength to Malaysia and Singapore. The 50,000-man British force in Malaysia, relatively cheap as it is, costs around \$300

million a year, or six times the profit sent home from British investments there; such is latter day "imperialism."

In 1963, Britain signed a treaty binding itself to defend the Malaysian Federation, and it has honored that pledge. But the whole subject was blasted open in August when Singapore suddenly withdrew from the federation. In an editorial entitled "What Are We Doing There?" the *Economist* asked a few questions of the kind bothering many Britons: "Just how necessary is it that Britain should be in a position to restrain Dr. Sukarno or his—quite possibly Communist—successor? What part ought Britain to play in containing China?"

If the British decide to phase out of Singapore or to reduce their commitment in the rest of Malaysia, Malaysia might become another Vietnam. It might anyway. The United States, in any event, may find itself obliged to take up the slack there, as it may in many another place east of Suez. The British, for example, want to get out of Aden, on the southwest corner of the Arabian Peninsula, even though some Britons regard it as vital to the country's Persian Gulf oil interests.

An important question is whether even existing British bases in the East are now enough—i.e., whether they are located in the most advantageous positions to box in southeast Asia and Africa. The United States may want to, indeed may have to, move in to back up and enlarge the West's outposts by establishing communication centers, supply bases, ports, and airports on a number of well-placed British islands in the Indian Ocean and off the coast of Africa.

Meantime U.S. obligations in Europe, which are great, cannot easily be reduced. Some 250,000 of our best-trained men are stationed in Germany. Just as the Chinese and other Asiatics would misread a withdrawal of troops from Korea, so the Russians might be emboldened by a sizable reduction of forces in Germany, or more precisely by a U.S. commitment to Asia on a scale that would deplete European reserves. Some U.S. specialists have already been shipped to Asia, and the West Germans get alarmed every time a group leaves.

Any speculation on future increases in military spending must weigh the possibility that France might pull out of NATO, and that our pipelines, bases, hospitals, etc., will have to be moved outside France. This restructuring of European military deployment will be expensive, even though the United States is developing a kind of long-range logistics system to offset it. The Pentagon finds, for instance, that it can often fly spare parts right from the United States more cheaply and expeditiously than it can maintain many depots abroad; everything needed for B-52 bombers is now stored in Texas, and for the F-100's in Utah.

INFINITE COMBINATIONS

The precise effect of any of these various defense spending possibilities on the country depends of course on *if* and *when* each becomes an actuality; the balance of an economy can change very fast when it is growing at around \$30 billion a year. The range of possibilities is almost infinite. If the Vietnam conflict subsides, annual military spending may not rise above the \$55 billion now in prospect; but a stepup to a rate of \$60 billion or more by next summer would surely

keep business humming. Depending on the strength and weaknesses in the rest of the economy, so might the same rate a full year later. And if by some outside chance Vietnam and other commitments were to accelerate steeply and simultaneously, and annual military spending were to hit a rate of \$65 billion by late 1967, the Nation still might not have to resort to direct controls as it did during the Korean war. For a \$65 billion level would still represent a stepup of \$15 billion in 2 years. Given such a stimulus, the economy would be sure to grow, in the same period, by some \$60 billion, or four times the increase in defense spending. In other words, the productive power of this guns, butter, and "then-some" economy is so immense that it can take almost any foreseeable defense increase in stride.

WINGS OVER VIETNAM

Dirty little ground wars like Vietnam were low in the Pentagon's calculations when the U.S. jet-age air force was planned. Consequently the war in Vietnam has opened up new areas of plane and helicopter procurement. Among the favorites and the candidates:

1. Hughes's OH-6A light helicopter, designed for observation; 714 are on order for the Army, and as many as 4,000 eventually may be ordered. The war looks like one in which helicopters will take the place of tanks and trucks; the Army has increased its helicopter companies to perhaps 50 each with 30 machines.

2. Boeing's CH-47A (Chinook) medium transport chopper, good at moving cargo and combat troops. The Army will spend at least \$125 million on them.

3. Bell's UH-1 (Iroquois or Huey) helicopter, also for cargo and troop transport. The Defense Department has ordered at least 1,500 at roughly \$140,000 each.

4. Northrop's \$700,000 F-5 twin-jet tactical fighter, which can carry a heavy bomb load and yet fly (after dumping its load) at 1,000 miles per hour. None has yet been ordered, but the F-5 may be one successor to the 18-year-old Douglas A-1 Skyraider, a piston-engine fighter whose ability to carry more than its weight in bombs proved invaluable not only in Korea but in Vietnam.

5. Ling-Temco-Vought's A-7A, a light attack bomber that can carry twice as much as any other plane in its class and carry it farther. It is also a candidate to succeed the A-1.

6. Lockheed's C-141 is doing most of the air-ferrying of men and material to Vietnam. It will be succeeded, in 2 or 3 years, by the giant C5-A, which will carry as many as 700 men or as much as 110 tons.

7. For counterinsurgency (COIN) jobs the Pentagon is considering a number of light armed reconnaissance planes. One of the candidates of North American Aviation was the YAT 28.

8. Hoping for orders, General Dynamics has gone ahead and built prototypes of its own counterinsurgency plane, the Convair Charger.

9. Even civilian planes, such as the new Piper Cherokee 6, are being considered for counterinsurgency work. Piper is just working up to production of three a day for the civilian market.

THE INFLATIONARY IMPACT OF THE FEDERAL BUDGET*

By MURRAY L. WEIDENBAUM, associate professor of economics at Washington University

An article in a recent issue of the *Journal of Finance* states, "If fiscal policy is to be developed into a more precise art, if not a science, then it is crucial to be able to pinpoint more accurately the timing and the extent of impact of fiscal measures."¹

The purpose of this article is to point out that the present time provides an important example of the need to understand the timing of the economic impact of fiscal measures. Moreover, an improved understanding may, it will be argued, lead to the conclusion that the inflationary impact of the January 1966 Budget submission has been underestimated and that fiscal policy measures may need to be modified substantially.

It has been pointed out in the literature on public finance that the impact on employment, production, and income of a military buildup may occur primarily at the point in time that budget recommendations are made, increased appropriations are enacted, and orders placed with military contractors. Although this may appear quite obvious to those acquainted with defense industries, the standard measures of Federal fiscal performance—such as the statement of Federal receipts and expenditures on national income account or the computation of the "high" employment budget surplus—confine the measurement to the actual delivery of completed weapons and other military "hard goods".

Immodestly, I cite the results of a detailed study of mine which examined the economic impact of each step in the long process between budget recommendations for military procurement and delivery of the completed items to the government and payment therefore.

The primary effect on productive activity, to the extent there is any, occurs in advance of the actual government expenditures. Under most circumstances, the placing of orders induces production on government accounts and such production remains in the private sector and does not show up as government expenditures until it is completed and the goods involved delivered to the public sector.²

This point was elaborated in testimony before the Joint Economic Committee in 1962 where it was shown that, conceptually, production on government order is not reflected in Government purchases of goods and services at the time the work is performed. This activity, as measured by the cost incurred, is currently included in the gross national product, in the change in business inventories. When the

*Reprinted from *Financial Analysts Journal*, July-August 1966.

¹ Joseph Scherer, "On Measuring Fiscal Policy," *Journal of Finance*, December 1965, p. 683.

² M. L. Weidenbaum, "The Timing of the Economic Impact of Government Spending," *National Tax Journal*, March 1959, p. 85.

Government contractor delivers the finished items, the transaction shows up in the national income accounts as a decline in business inventories.

It also is then recorded as a Government purchase of goods and services. These two entries tend to cancel each other out, with no net effect on GNP. At the time it is recorded in the national income accounts, the Government purchase does not represent payments to the factors of production; it is more in the nature of an intersectoral transfer—a reimbursement to the Government contractor for his outlays during earlier periods.

It is at the order stage that the government action normally will have its initial and often major impact on the markets for labor, raw materials, and financial resources. The contribution to economic activity is made during the production period prior to the actual government "purchase." Indeed, the recording of the government purchase may coincide in time with a reduction in governmental impact on total demand.³

HISTORICAL EXPERIENCE

If we reflect upon a previous military buildup effort of the United States—the Korean mobilization—we can see that the proper understanding of the timing of the economic impact of such government activity can have important consequences for Federal fiscal policy. The \$3.5 billion budget surplus during the first year of that defense expansion—fiscal year 1951—was hardly adequate in a period of rapid military buildup, as indicated by the accompanying inflationary pressures of substantial proportions.

Using conventional measures, Federal expenditures remained fairly stable during 1951. In contrast, the amount of appropriations and other "new obligational authority" granted by the Congress for the year was 68 percent above the 1950 total. The aggregate amount of contracts let and other obligations entered into by the Federal agencies almost doubled in the first year of the Korean mobilization program. The interplay during that crucial period of the opposing tendencies of the opposite ends of the Federal spending process was clearly brought out in the following comment on this period by the Joint Committee on the Economic Report:

The ineffectiveness of the governmental cash surplus, normally a deflationary force, was, in large part, attributable to anticipatory forces on the inflationary side arising from the current or expected placement of orders for future deliveries.⁴

The following year, fiscal 1952, was the period of the actual major increase in Federal defense expenditures; it was one of comparative stability in the American economy. Several interesting points emerge from an examination of the Korean mobilization program:

1. The major expansion in economic activity occurred at approximately the same time as the announcement and authorization of the program, and while many of the defense orders were being placed.

³ "Statement of Murray L. Weidenbaum" in U.S. Congress, Joint Economic Committee, *Inventory Fluctuations and Economic Stabilization*, 1962, pp. 170-179. See also Edward Greenberg, *Employment Impacts of Defense Expenditures and Obligations*, Washington University, Department of Economics, Working Paper 6505, April 29, 1965; Michael Spiro, *Impact of Government Procurements on Employment in the Aerospace Industry*, Massachusetts Institute of Technology, Alfred P. Sloan School of Management, Working Paper 134-65, November 1965.²

⁴ U.S. Congress, Joint Committee on the Economic Report, *National Defense and the Economic Outlook for the Fiscal Year 1953, 1952*, p. 49.

2. The expansion in economic activity slowed down at about the same time that the rise in new obligational authority slowed down.

3. The major rise in economic activity occurred prior to the major rise in government expenditures.⁵

Because the early stages of the government spending process often show up in the private sector rather than in the public sector—particularly private production on government account—it is a temptation, during periods characterized by sharp increases in government purchasing, to conclude that private rather than government demand is contributing the inflationary pressures. The following is an example of this shortcoming which often mars otherwise cogent analyses. The author is discussing the first year of the Korean mobilization program:

This great increase in private demand took place at a time when the federal budget was running at a surplus, and when the direct increase in expenditure for security programs was quite small. Thus most of the inflation in the year after Korea can be said to have been caused by the large volume of private spending. *The important point is that Federal fiscal policy cannot be held directly responsible for the inflation.*⁶

Maintaining that Federal fiscal policy was not inflationary during a period when the rate of military orders was doubling and constituted the major expansionary force in the economy may, in retrospect, appear to be a somewhat odd interpretation. However, the purpose here is not to dwell about ancient error, but to examine the possibility of its being repeated at the present time.

THE JANUARY 1966 PRESIDENTIAL MESSAGES

The budget message of the President issued in January 1966 states:

This budget presents a responsible fiscal program. It accommodates our foreign and domestic responsibilities in an environment of strong but noninflationary economic growth.⁷

The January 1966 Annual Report of the Council of Economic Advisers estimates that both the actual and high employment (née "full" employment) budgets on the national income accounts basis are expected to be approximately in balance in fiscal 1967.⁸

The text of the report does not cover 1966. However, the statistical appendix provides some extremely useful information. It shows that the Federal Government is anticipated to move from a point of some restraint in fiscal 1965—a surplus of \$1.2 billion on the national income account basis—to a deficit of \$2.2 billion in 1966. No estimate is presented for 1966 on a "high employment" budget basis.

The body of the Economic Report does not explain why fiscal policy will shift from mild restraint in 1965 to a somewhat expansionary condition in 1966. However, this point becomes more acute when attention is drawn to the measures of the early stages of the government procurement and expenditure process.

Appropriations and other new obligational authority is estimated to rise (on an administrative budget basis) from \$106.6 billion in fiscal

⁵ M. L. Weidenbaum, "The Economic Impact of the Government Spending Process," *Business Review*, University of Houston, Spring, 1961, pp. 39-40.

⁶ W. Glen Campbell and others, *Economics of Mobilization and War*, Homewood, Ill., Richard D. Irwin, 1952, p. 75.

⁷ *The Budget of the United States Government for the Fiscal Year Ending June 30, 1967*, 1966, p. 9.

⁸ *Economic Report of the President*, 1966, p. 54.

1965 to \$126 billion in 1966, an 18 percent growth. Compared to this \$19.4 billion rise, budget receipts are projected to go from \$93.1 billion to \$100 billion during this same period—an increase of only \$6.9 billion. As shown in table 1, the bigger increase in revenues will occur in fiscal 1967, when the expansion in new funding will have dampened down.

TABLE 1.—*Selected measures of Federal finance*

[In billions]

	Fiscal years—		
	1965	1966	1967
New obligational authority.....	\$106.6	\$126.6	\$121.9
Budget receipts.....	93.1	100.0	111.0

Source: 1967 *Budget*, pp. 11, 16.TABLE 2.—*Selected measures of military finance*

[In billions]

	Fiscal years—		
	1965	1966	1967
New obligational authority.....	\$50.5	\$63.3	\$59.9
Obligations incurred.....	50.2	63.7	62.8
Expenditures.....	47.4	54.2	58.3

Source: U.S. Department of Defense, *FAD-524*, Jan. 24, 1966.

An examination of the available measures of the military budget is quite revealing. As shown in table 2, the entire current expansion in new obligational authority and obligations to be incurred for the Department of Defense is scheduled for fiscal 1966; in fact, declines are projected for 1967. In contrast, the expenditure rise is slower in 1966 and continues to 1967. It would appear, on the basis of the published materials, that the major expansion in Federal programs will occur during the present year and that fiscal restraint will not take hold until next year.

SUMMARY

Given the nature of the military and political assumptions underlying the 1967 budget, an evaluation of its economic impact is hazardous. Nevertheless, it would appear, on the basis of the justifications and explanations accompanying the document, that the current, immediate inflationary potential—during the fiscal year 1966—has been virtually ignored. The fiscal policy sketched out for 1967 may be adequate, assuming no Vietnam supplemental in the 1968 budget, but this writer has the uneasy feeling that the inflationary experience that accompanied the first year of the Korean expansion may be repeated at the present time, although on a reduced scale. Hence, once again, failure to focus on the full range of measurements available of the economic impact of the government spending process may result in inappropriate fiscal policies being adopted.

THE VIETNAM WAR: A COST ACCOUNTING *

BY WILLIAM BOWEN

The Vietnam war is peculiarly expensive, far more so than is generally thought. Costs are running above \$13 billion a year, and are headed up. *Fortune's* figures suggest that we're in for bigger defense budgets—and new economic strains.

What happens in the U.S. economy over the next year or two, what happens to demand and production and prices and taxes, will to a large extent depend upon the cost of the Vietnam war. If anyone inside the Pentagon knows the current cost, he is not telling, nor, of course, is anyone there telling about costs associated with future operations. Accordingly, *Fortune* has undertaken on its own to figure out the cost—present and prospective—of the Vietnam war. It is already costing a lot more than almost anybody outside the Pentagon imagines.

At present, with about 235,000 U.S. servicemen in South Vietnam, the U.S. costs are running at a yearly rate of more than \$13 billion. Costs, it should be observed at once, cannot be translated mechanically into expenditures; a drawdown on inventories involves a cost, but may not involve an expenditure for quite some time. Still, if the war continues at only the present rate through fiscal 1967 (the year beginning next July 1), the resulting Defense Department expenditures will probably exceed the \$10 billion or so that the hefty 1967 defense budget officially allows for the Vietnam war.

But the war, it appears, will get bigger. U.S. Senators who know what Defense Department witnesses say in closed congressional hearings have predicted a U.S. buildup to 400,000 men, or more. Gen. William C. Westmoreland, the U.S. commander in Vietnam, has reportedly requested a buildup to 400,000 by the end of December. With that many U.S. servicemen in South Vietnam, the cost of the war would run to \$21 billion a year—even more if bombing and tactical air support increased in proportion to the buildup on the ground. At any such level the Vietnam war would bring on economic strains beyond what most economists appear to foresee, and beyond what makers of public policy appear to be anticipating. The strains would surely add to the pressure for higher taxes.

In its Vietnam cost accounting, *Fortune* had considerable help from outside economists, but no access to classified data. The basic sources were public documents—Federal budgets, Defense Department publications, transcripts of congressional hearings. Defense Department officials interviewed were persistently wary of discussing the costs of the war, although the department proved willing to pro-

*Reprinted from *Fortune*, April 1966.

The cost analysis for this article was carried out by a team consisting of, in addition to Mr. Bowen: Alan Greenspan, president of Townsend-Greenspan & Co., consultants; P. Bernard Nortman, independent economic consultant; Sanford S. Parker, chief of *Fortune's* economic staff; and research associate Karin Cocuzzi.

vide some missing bits of factual information that would otherwise have been unobtainable. It turned out that some costs—of ammunition, for example—could be easily calculated from published Defense Department figures. But getting at some other costs required elaborate calculations, and still others could only be estimated. Estimates and assumptions were in all cases conservative. The results, set forth by category below, represent what is probably the first serious effort outside the Defense Department to analyze the costs of the war.

The purpose of the undertaking was not to make a case against (or for) the fiscal 1967 defense budget, but to provide a basis for looking beyond the budget and assessing the potential economic effects of the war. In wartime no defense budget can sensibly be viewed as a hard forecast of defense spending. Actual expenditures during the fiscal year will be determined by unfolding events that no budgeter can foresee months in advance. So far as the economy is concerned, then, what counts is not budget projections but Defense Department orders and expenditures.

The costs and expenditures resulting from a war do not match up in the short run. They rise and decline in different trajectories. In the early phases of any war, the Defense Department can hold down expenditures by drawing upon existing forces and supplies, just as a business firm can temporarily reduce cash outlays by letting inventories dwindle, or a family can cut next month's grocery bill by eating up the contents of the pantry. Later on in the war, expenditures catch up with costs. It must be kept in mind that "expenditures," as used here, means *incremental* expenditures—those that would not be required if it were not for the war.

An idea of the movements of costs and expenditures and defense orders, and their changing economic effects, can be gathered from the following budgetary-economic scenario of a medium-sized war—i.e., a war not very different from the one in Vietnam.

A WAR IN FIVE ACTS

Act I. It looks like a small war, and it requires only smallish incremental expenditures. The forces sent overseas are members of the existing Defense Establishment, and the Defense Department would have had to pay, feed, and otherwise provide for them if they were doing peacetime duties in Georgia instead of fighting guerrillas in a tropical republic. The weapons, ammunition, and equipment come from existing stocks. The extra expenses (hostile-fire pay, transportation) can be temporarily absorbed in the immensity of the defense budget, and the administration does not have to ask Congress for supplemental appropriations to finance the war. It is being financed, in effect, through "reduced readiness"—that is, the United States has fewer trained men and smaller stocks of war matériel to deploy or use in any *other* contingencies.

Act II. The struggle has expanded, and the Armed Forces need extra inflows of men and matériel to compensate for the unexpectedly large outflows to the war zone. The Pentagon places contracts for additional arms, ammunition, equipment; it expands draft calls and recruitment efforts. The administration asks Congress for supplemental appropriations. War expenditures are still only moderate, but with defense orders increasing and inflationary expectations

beginning to stir, the war is already having noticeable effects upon the economy.

Act III. The U.S. buildup in the war zone has continued. The administration has asked Congress for large supplemental appropriations. Spending still lags behind costs, but it is rising fast—the recruits in training have to be paid, and so do the additional civilians hired. The war's economic effects, moreover, are expansionary out of all proportion to the actual increases in defense spending: the surge in defense orders has increased demand for skilled workers, materials, components, and credit in advance of deliveries and payments. To some extent, the Defense Department's matériel buildup is being temporarily financed by the funds that contractors and subcontractors borrow from banks against future payments from the U.S. Treasury.

Act IV. The U.S. military buildup in the war zone tops out. Defense production continues to rise, but the *rate* of rise is much less rapid than in Act III, and the expansionary economic force exerted by the war begins to wane. Deliveries of arms, ammunition, and equipment rolling into military depots more than match the chewup of matériel in the war, and so some replenishment of inventories takes place. Men are moving out of training and into operating units faster than forces are being sent overseas, and so there is a net buildup of trained, deployable military forces in the United States. Expenditures catch up with costs.

Act V. The war ends. The dropoff in contract awards and the collapse of inflationary expectations reverberate throughout the economy. Far from falling steeply, expenditures continue to rise a bit before entering into a gradual decline: the incoming deliveries must be paid for, and the men brought into the Armed Forces must be provided for until they are mustered out. With deliveries no longer partly offset by wartime chewup, inventories fill rapidly, and begin to overflow. During the period of readjustment, military manpower and military inventories exceed normal peacetime requirements. Expenditures for this excess readiness largely make up for the expenditures deferred through reduced readiness in the early phases of the war.

In January, 1965, the Vietnam war was still in act I, and to all appearances nobody in the administration expected an act II. The President's budget message declared that, with the "gains already scheduled," U.S. military forces would "be adequate to their tasks for years to come." The new budget projected a *decrease* in defense spending in fiscal 1966, and a *decline* in total uniformed personnel. Maj. Gen. D. L. Crow, then Controller of the Air Force, subsequently testified at a congressional hearing that "the guidelines for the preparation of the budget as they pertain to Vietnam were actually a carry-forward of the guidelines that were used in the preparation of the 1965 budget, and they did not anticipate increased activity, per se, in Vietnam."

IT'S NOW ACT III

Not until last May was it entirely evident that act II had begun, but there were intimations earlier. In January 1965, after declining for four consecutive quarters, the Federal Reserve Board index of "defense equipment" production turned upward, beginning the precipitous climb depicted at the bottom of the page opposite. In February the United States began bombing targets in North Vietnam.

In March the decline in Army uniformed personnel came to a halt, though the downtrend continued for a while in the other services. In April the U.S. buildup in Vietnam accelerated. In May the administration asked for, and Congress quickly voted, a supplemental fiscal 1965 appropriation of \$700 million. In June the decline in total uniformed military personnel turned into a steep rise.

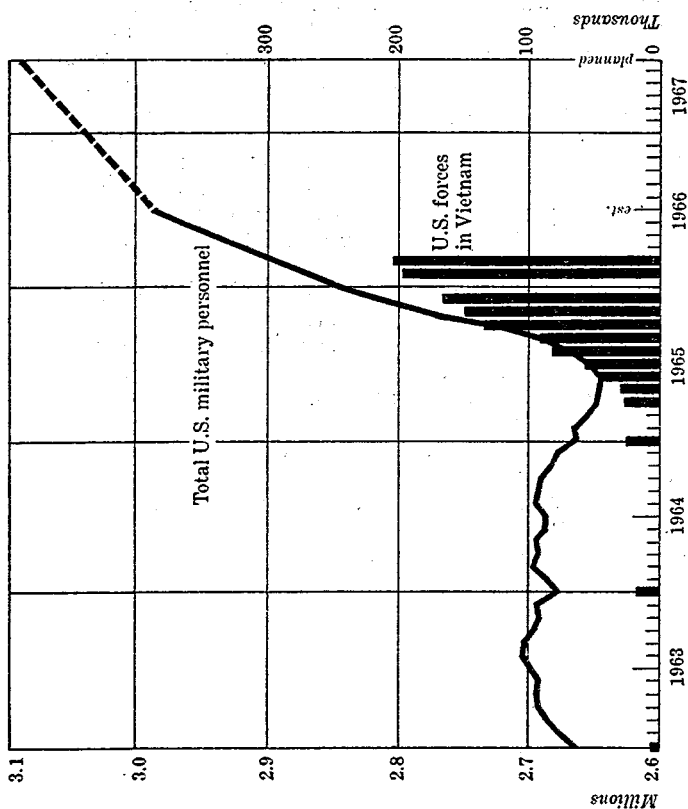
The Vietnam war is now well along in act III of the budgetary-economic scenario. Since that \$700 million request in May 1965, the administration has asked for \$14 billion in supplemental war appropriations. Soaring orders for ammunition and uniforms have contributed to shortages of copper and textiles for civilian use. So far, however, the costs of the war have been largely channeled into reduced readiness. The war reserve of "combat consumables" has been drawn down. New equipment and spare parts that otherwise would have gone to units elsewhere have been diverted to Vietnam—Iroquois helicopters, for example, that would have gone to the 7th Army in Germany. Fixed-wing aircraft to replace losses in Vietnam have been ordered, but not yet fully delivered and paid for. The war has required only moderate incremental expenditures (that must be understood, however, to mean "moderate" as war expenditures go—a few billion dollars). But as deliveries roll in and the Armed Forces expand, expenditures will begin to catch up with the war's far from moderate costs.

In numbers of U.S. servicemen deployed, the Vietnam war is not as big as the Korean war at its peak. But costs per man run much higher than they did in the Korean war. The pay that servicemen get has gone up more than 40 percent since then. Some materiel costs have risen very steeply since Korea. The F-86D fighters in Korea cost about \$340,000 each; the F-4C's in South Vietnam cost nearly six times as much. Ammunition use per combat soldier is very much higher than in the Korean war. The M-14 rifle fires up to 150 rounds per minute, and 10 rounds per minute at a sustained rate. The M-16, carried by some Special Forces troops, can use up ammunition at a full-automatic rate of 750 rounds per minute. The M-79 grenade launcher fires grenades as if they were bullets.

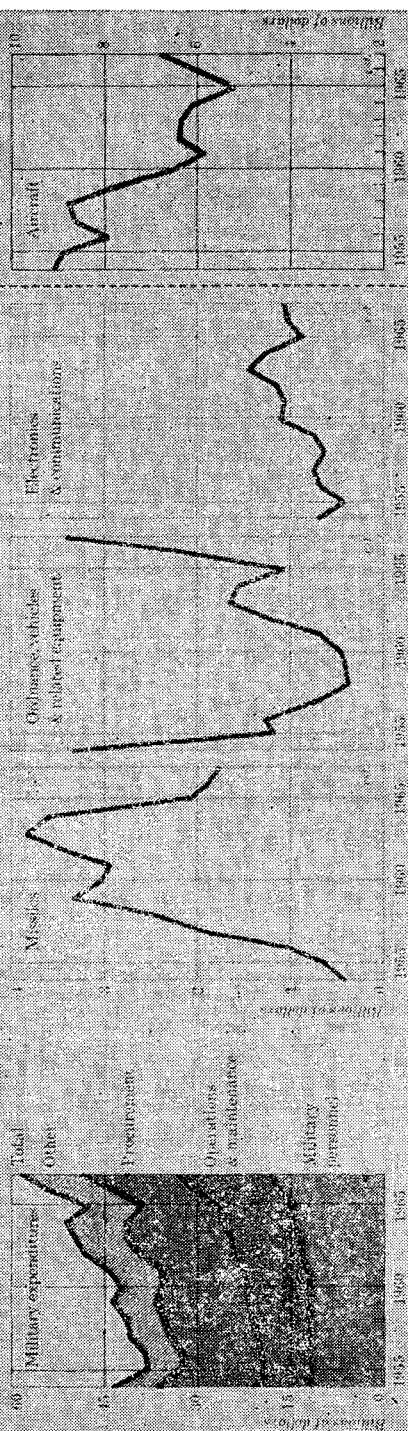
The nature of the war contributes to making it peculiarly expensive for its size. Technologically sophisticated military forces, magnificently equipped to kill and destroy, are inefficiently employed against meager or elusive targets. In Korea, there were visible masses of enemy forces to shoot at, and the U.S. superiority in weapons could be exerted efficiently; in Vietnam the enemy hits and runs, moves under cover of darkness or foliage. With their abundant firepower, the superb U.S. fighting men in South Vietnam clobber the Vietcong in shooting encounters, but the U.S. forces run up huge costs—in troop supplies, fuel, helicopter maintenance—just trying to find some guerrillas that they can shoot at.

Vietnam Requirements Are Pushing U.S. Armed Forces over the Three-Million Level...

In keeping with Secretary McNamara's long-range plans, the total number of U.S. military personnel shrank in the latter half of calendar 1964, and the shrinkage continued until May, 1965, even after the buildup of U.S. forces in South Vietnam had begun. But after May the military-personnel curve rose steeply. By the end of June, 1967, according to plans already announced, the armed forces will have 452,000 more men than they had at the May low. As the chart shows, far more men have been added to the armed forces since May, 1965, than actually have been sent to Vietnam since then. A main reason for the disparity is that it takes a serviceman outside the theatre of war to support one in Vietnam.

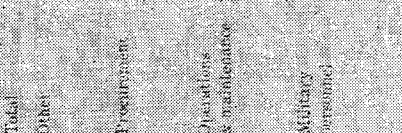
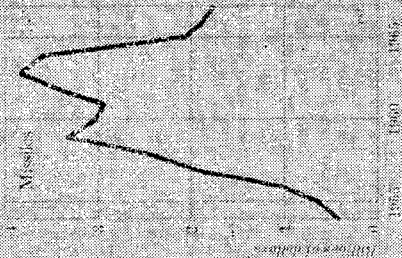
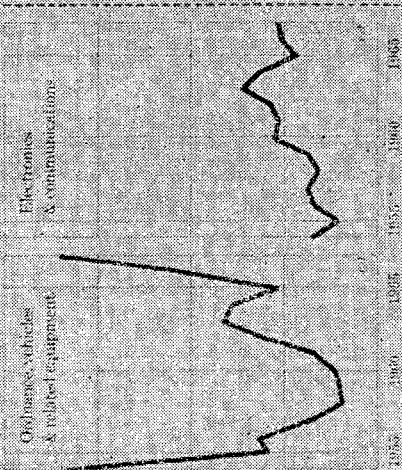
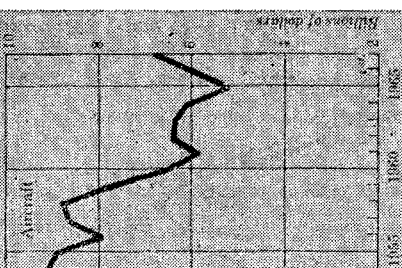


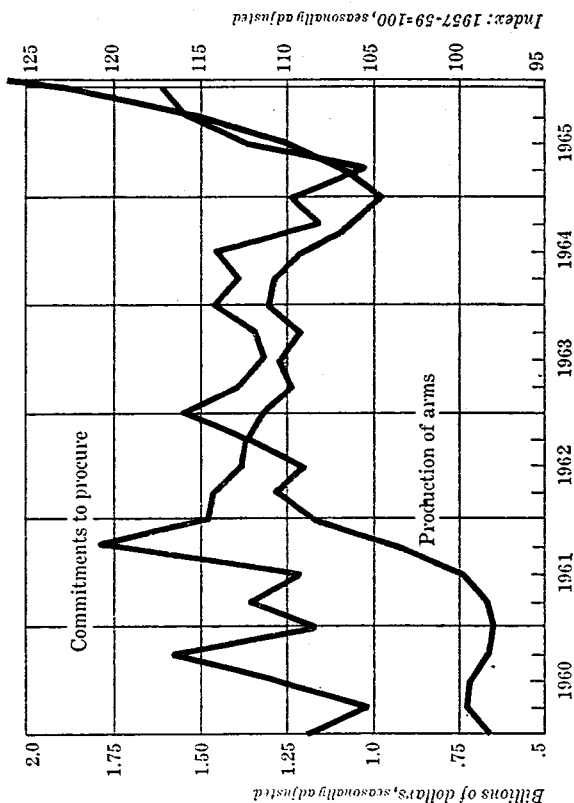
... and Are Also Changing the Composition of Defense Spending...



After trending upward from 1950 on, total U.S. military expenditures fell in fiscal 1965, and as the layer chart at left shows, the drop resulted mainly from a decline in procurement; there was also a decline in the "other" category, mainly in spending for research and development and military assistance. The four charts to the right

configure a closer look at the shift in procurement—a shift away from heavy spending for strategic missiles and toward more for "limited-war" capabilities, especially for "ordnance, vehicles & related equipment." Spending for aircraft, after a ten-year decline, has surged upward as a result of Vietnam.





... While Defense Production Soars

Both lines of this chart show quarterly changes, seasonally adjusted. Arms production as measured by the Federal Reserve Board "defense equipment" index (main components: military aircraft, ordnance, Navy ships) rose during 1961, the first year of McNamara's stewardship, remained on a bumpy plateau in 1962 and 1963, declined in 1964, then moved into a spectacular upswing beginning in the first quarter of 1965. By January, 1966, the index had reached 126 percent of the 1957-59 average, indicating that the Vietnam war has already had a substantial impact on the economy. Contracts normally precede production, and so the commitment line normally moves up (or down) months ahead of the production line, but in 1965 there was an extraordinary switch in this relationship. The reason is that arms production was pushed upward by a surge in precontract "letter contracts" from the Defense Department—a sign of urgency.

FIRING INTO A CONTINENT

There is an almost profligate disparity between the huge quantities of U.S. bullets and bombs poured from the air upon targets in Vietnam and the military and economic damage the bullets and bombs do, in the aggregate. In North Vietnam the United States has debarred itself from attacking economically valuable targets such as port facilities and manufacturing plants. From bases in Thailand, F-105's fly over North Vietnam and drop their mighty payloads on or near roads, rail lines, ferry facilities, bridges. The costs to the enemy of repairing the damage are picayune compared to the costs to the United States of doing the damage. In South Vietnam the guerrillas seldom present concentrated targets. Machineguns mounted on helicopters and on A-47's (elderly C-47's, modified and fitted with three guns) fire streams of bullets into expanses of jungle and brush that are believed to conceal Vietcong guerrillas. The thought of an A-47 firing up to 18,000 rounds per minute into treetops brings to mind that bizarre image in Joseph Conrad's *Heart of Darkness*, of the French warship off the African coast: "There wasn't even a shed there, and she was shelling the bush * * * firing into a continent."

B-52's, operating at a cost of more than \$1,300 per hour per plane, fly a 10-hour round trip from Guam to South Vietnam to strike at an enemy that has no large installations or encampments visible from the air. The B-52's have been fitted with extra racks that increase their payloads to more than sixty 750-pound bombs, about \$30,000 worth of bombs per plane. "The bomb tonnage that is resulting is literally unbelievable," said Secretary McNamara at a Senate hearing last January. Several weeks later, at a press conference, he said: "Our consumption in February * * * of air-delivered munitions alone in South Vietnam was two and a half times the average monthly rate in the 3 years of the Korean war." But much of that "literally unbelievable" bomb tonnage merely smashes trees and blasts craters in the earth.

Only a rich nation can afford to wage war at ratios so very adverse. But the United States is a rich nation. If there is a great disparity between the bomb power dropped and the economic value of the targets, there is also a great disparity between the wealth and power of the United States and of the enemy. The cost of the bombs is small in relation to the GNP of the United States, and the damage they do is sometimes substantial in relation to the GNP of North Vietnam, or to the resources available to the Vietcong. But the costs of winning are going to be unpleasantly large.

The official position of the Defense Department is that it does not know what the costs of the war are, and that it does not even try to compute them. As a Pentagon official put it: "We have no intention of cost-accounting the war in Vietnam. Our business is to support the conflict there. Our business is not cost accounting. We have no estimates of costs. It's not practical to say the war has cost x dollars to date."

The Defense Department argues that the war costs are commingled with those of a military establishment that existed before the U.S. troop buildup in South Vietnam began. And that, of course, is true. Still, a meaningful total can be arrived at by analyzing and adding up the various war costs, regardless of whether they translate

immediately into added expenditures. One way or another, we may assume, all costs will result in either added expenditures or reduced readiness, and in the reckoning of the costs it does not matter which, or when, or how.

Fortune's first objective was to arrive at an approximation of annual costs at the early-1966 level of 200,000 U.S. servicemen in South Vietnam. The results of that analysis can serve, in turn, as a basis for calculating costs at higher levels of buildup. In what follows, costs are divided into standard categories—military personnel, operation and maintenance, and procurement—that the Defense Department uses in its budgeting. To outsiders, the department's assignment of expenses to these categories sometimes seems a bit arbitrary. Some clothing is funded under personnel and some under operation and maintenance; ordinary repair parts are funded under O. & M., aircraft "spares" under procurement.

INSIDE AND OUTSIDE THE THEATER

Military personnel. As noted, the fiscal 1966 defense budget, submitted in January 1965, projected a moderate *decline* in total uniformed military personnel ("Active Forces"), from about 2,663,000 at that time to 2,640,000 as of June 30, 1966. Actually, the decline proceeded so briskly that the total got down to 2,641,000 in May 1965. Since then the Defense Department has announced plans to *increase* military personnel to 2,987,000 by next June 30, and to add on another 106,000 by June 30, 1967; by the latter date, the total would be 452,000 above the May 1965 low point. In addition the Department is expanding the civilian payroll by about 100,000 during fiscal 1966, and many of these civilians will take over work previously done by servicemen, freeing them for other duties.

It might appear that these figures could serve as a basis for calculating the personnel costs attributable to the Vietnam war. But it is impossible, without knowing the Defense Department's classified plans and assumptions, to relate the announced personnel increases to any particular force level in South Vietnam. And to have any meaning, statements about the cost of the Vietnam war must be related to specified force levels. Here we are trying to get the cost of the war at a particular level—200,000 U.S. servicemen in South Vietnam. For this reckoning, the war personnel costs may be taken as the combined personnel costs of (1) the 200,000 men in Vietnam, (2) the peripheral supporting forces in southeast Asia, and (3) the required backup forces. The Defense Department defines personnel costs as pay and allowances, subsistence (chow), personal clothing (the "clothing bag" issued to each recruit), plus certain other expenses. Average personnel costs in the armed forces run to \$5,100 per man per year, but the men in South Vietnam get "hostile-fire pay" of \$65 a month, and other war costs boost the average to about \$6,200. So, 200,000 men at \$6,200, or \$1,240,000,000.

The peripheral supporting forces—mainly aboard 7th Fleet ships and at bases in Thailand—numbered at least 50,000 last winter, when the U.S. force level in South Vietnam reached 200,000. That's 50,000 men at \$6,200 a year, or \$310 million.

Each thousand U.S. servicemen stationed overseas under nonwar conditions have on the average about 600 other servicemen backing

them up: trainees, transients, men serving in supply units or performing various auxiliary functions. But it takes far more than 600 men to back up a thousand men deployed in South Vietnam. Additional supply men are required to keep the huge quantities of arms, ammunition, equipment, and supplies moving into the theater of war. The men serving there are rotated home after a 1-year tour (a 3-year tour is normal for U.S. forces in Western Europe), and additional trainees are needed to support the rotation. Extra backup men are needed, also, to make up for the erosion resulting from deaths, severe injuries, and tropical ailments. In the course of a month, large numbers of men spend some days or weeks in transit to or from South Vietnam. And additional men in training require additional men to train them. With all the additions, it works out that there is a ratio of one to one, or 1,000 to 1,000, between servicemen in the theater of war and servicemen outside the theater but assignable to the war as elements of cost.

For the 250,000 men in Vietnam and vicinity, then, there will be 250,000 others elsewhere. Since some of these are new recruits, the average personnel cost is taken to be only \$4,700. That makes another \$1,175,000,000, bringing total personnel costs to \$2,725,000,000.

KEEPING THEM FLYING

Operation and maintenance. This category is even more capacious than its name suggests. It includes everything that does not fall into other categories—recruitment, training, medical care, repairs, operation of supply depots, transport of goods, and, in the official expression, “care of the dead”. A great many of those additional civilians hired by the Defense Department in the last several months are working in O. & M.

In fiscal 1965, O. & M. for the entire Armed Forces averaged out to \$4,630 per man. For 500,000 men that would come to \$2,315,000,000. But the Vietnam war entails extraordinary O. & M. expenses. Planes there fly a lot more hours per month than they normally do, and the extra O. & M. involved in keeping them flying runs at a rate of more than \$200 million a year. Extra repair and maintenance are required to keep vehicles moving and equipment working. An enormous logistic flow must be coped with—more than 700,000 tons a month. The shipping costs to Vietnam amount to \$225 million at a yearly rate. Combat clothing gets ripped up in the bush, deteriorates rapidly in the moist tropical heat. And, of course, extra medical care per man is needed in a tropical war. When all the extra O. & M. costs involved are added together, the total, by a conservative reckoning, comes to \$1 billion. That brings the over-all O. & M. costs to \$3,315,000,000.

Procurement, i.e., materiel costs. As reckoned here, these are taken to be the chewup in the war zone rather than the additional procurement resulting from the war. Ammunition and aircraft losses together account for more than 75 percent of materiel costs, and for both categories the costs can be calculated with some statistical precision.

McNamara reported last January that U.S. ground forces in South Vietnam, including Army and Marine helicopter units, were “consuming ammunition at the rate of about \$100 million per month,” and that U.S. air forces were using up “air munitions” (mostly

bombs) at a rate of about \$110 million per month. That works out to a combined rate of \$2.5 billion a year. At that time there were about 190,000 U.S. servicemen in South Vietnam, so for the calculation of costs at the 200,000-man level, the figure has to be adjusted upward a bit, to \$2,650,000,000.

In testifying at congressional hearings, McNamara and other Defense Department witnesses furnished numerous bits of information about U.S. aircraft operations in the Vietnam war, including losses in 1965 and numbers of sorties over various periods (one flight by one plane counts as one sortie). Sorties per month increased dramatically during 1965, and despite low loss rates per 1,000 sorties, losses added up to large numbers over the course of the year: 275 fixed-wing aircraft lost as a result of "hostile action" alone, and 177 helicopters lost, 76 as a result of "hostile action," 101 in accidental crashes and other mishaps. Assuming continuation of 1965 ratios between sorties and losses, estimated annual attrition at a 200,000-man force level works out, in rounded figures, like this:

475 fixed-wing tactical planes, at \$1,800,000-----	\$855, 000, 000
165 other fixed-wing planes (transport, observation), at \$200,000-----	33, 000, 000
320 helicopters, at \$250,000-----	80, 000, 000
Total-----	968, 000, 000

A figure for aircraft spares was arrived at by first calculating total flying costs of the aircraft operations (information on average flying costs per hour for various types of military aircraft is available). That came to \$800 million a year. Spares represent, on average, 20 percent of flying costs, which comes to \$160 million. With the addition of a minimal \$25 million to allow for spares required to repair planes hit by enemy fire, the total for aircraft spares comes to \$185 million.

Little information is available about materiel chewup, apart from ammunition and aircraft. In the absence of direct evidence, however, Defense Department procurement orders provide a basis for rough estimates. It is assumed—and this is a bit of a leap—that the annual attrition of weapons, vehicles, and equipment is equivalent to one-third of the increase in procurement orders in those categories (as measured by the increase in prime contract awards from the second half of 1964 to the second half of 1965). From that procedure emerges a round figure of \$600 million for attrition of hard goods other than aircraft, ammunition, and ships (in effect, ship losses are assumed to be zero). That brings total procurement to \$4.4 billion.

The three categories together—military personnel, O. & M., procurement—add up to \$10,440,000,000. That is the approximate annual cost of the U.S. operations in the Vietnam war at the 200,000-man level reached early this year. To that figure must be added support for South Vietnamese military forces. (For fiscal 1967, military assistance to South Vietnam will be included in the defense budget.) Counting supplemental requests, total military aid to South Vietnam comes to more than \$1 billion in the current fiscal year. In the early 1960's, military aid to South Vietnam ran to something like \$100 million a year; the \$900 million difference can be considered a Vietnam war cost. In addition, the United States pays \$50 million to help support South Korean forces in South Vietnam.

Much of the \$1.4 billion that Congress has appropriated in fiscal 1966 for military construction in southeast Asia has to be counted as part of the Vietnam war cost. According to Secretary McNamara's testimony at a Senate hearing, all of the contemplated construction "is associated with the operations in South Vietnam." Some of the facilities may have military value to the United States after the war is over, but it seems reasonable to suppose that at least \$1 billion of the planned construction would not have been undertaken had it not been for the war. If that is spread over 2 years, construction adds \$500 million a year to the cost of the war.

That brings the grand total to \$11.9 billion a year. This figure does not allow for an important deferred cost, depreciation of equipment. Since the Defense Department does not pay taxes or operate in terms of profit and loss, the business-accounting concept of depreciation is hard to apply, but the wearing out of equipment is a reality whether it is cost-accounted or not. This wearout is a separate cost from the additional maintenance and repair required to keep planes and ground equipment operating in the Vietnam war. Tactical planes and Military Airlift Command planes involved in the war are flying 60 percent more hours per month than they normally do in peacetime, and even with extra maintenance their useful lives are being shortened. The consequences will show up in future defense budgets.

In addition, the war imposes substantial nonmilitary costs that are not included in the \$11.9 billion (or in the other war-cost figures that follow). U.S. economic aid to South Vietnam, for example, leaped from \$269 million in fiscal 1965 to \$621 million in the current year.

MORE MEN FOR PATROL, SEARCH, PURSUIT, ATTACK

The \$11.9 billion may be taken as the annual military cost of sustaining the war with 200,000 U.S. servicemen in South Vietnam—the level reached around February 1. Given that yardstick, it is a relatively simple matter to cost out the present level (about 235,000 in South Vietnam). It can be assumed that costs have increased since February in direct proportion to the buildup, except that construction costs and military aid to South Vietnam remain unchanged. So calculated, the current cost works out, at an annual rate, to \$13.7 billion—the "more than \$13 billion" mentioned at the beginning of this article.

Efforts to project costs at very much higher levels of buildup run into some uncertainties. Costs at the 400,000-man level—the level General Westmoreland is reportedly aiming for by the end of this year—would not be double those at 200,000. For one thing, the expansion of U.S. forces will itself tend to alter the character of the war. Indeed, it has already. The widening U.S. superiority in firepower forced the enemy to cut down on direct assaults by battalions and regiments and revert pretty much to guerrilla warfare. As the number of GI's in South Vietnam increases, the forces needed to guard the coastal enclaves will not have to increase proportionately, so a larger percentage of the total combat-battalion strength will be available for patrol, search, pursuit, and attack operations. Some costs, as a result, will increase faster than the number of U.S. service-

men in South Vietnam—e.g., *Fortune* has assumed a 5-percent increase in the rates of ground and helicopter ammunition use per 100,000 men.

But in some respects costs would not nearly double as we built up to 400,000. The existing construction plans, for example, provide for port facilities, roads, and installations beyond current requirements. Costs of supporting South Vietnamese forces would not double either—South Vietnam's military and paramilitary forces already number about 600,000 men, and an increase of even 50 percent could not be squeezed out of a total population of 16 million. (An increase to 670,000 has been announced, however, and some upgrading of the military equipment and supplies furnished by the U.S. will undoubtedly occur.) Bombing and tactical air support operations would probably not double either: lack of runways would prevent that large an expansion.

In *Fortune's* calculation it was assumed that the 100 percent increase in U.S. servicemen in South Vietnam, from 200,000 to 400,000, would be accompanied by these less than proportionate increases:

- 50 percent in bombing and tactical air-support operations;
- 10 percent a year in construction costs;
- 15 percent in military aid to South Vietnam.

On these exceedingly conservative assumptions, the costs at 400,000 come to the resounding total of \$21 billion a year.

To calculate Vietnam war costs during fiscal 1967 it is necessary to make some assumptions about the pace of the buildup. *Fortune* assumed that U.S. forces in South Vietnam would increase to 250,000 men by this June 30, expand steadily to reach 400,000 as of December 31, and then remain at that level. On this basis the prospective Vietnam war costs during fiscal 1967 work out to \$19.3 billion.

USED-UP OPTIONS

The \$58.3 billion defense budget for fiscal 1967 includes, by official reckoning, \$10.3 billion in expenditures resulting from the Vietnam war. With a buildup to 400,000 in fiscal 1967, war expenditures during the year would greatly exceed this figure, but would not necessarily boost total defense spending as much as \$9 billion. For one thing, Secretary McNamara can cut somewhat further than he already has into programs not directly connected with the war.

But not very far; McNamara's options for deferring expenditures in fiscal 1967 have been pretty well used up. The 1967 defense budget shows a total of \$1.5 billion in cutbacks in military construction, strategic-missile procurement, and other non-Vietnam programs. In view of McNamara's economizing in recent years, there cannot be much leeway left for deferrals. The Secretary himself said not long ago that in shaping the 1967 budget he had deferred "whatever can be safely deferred," which suggests that there is *no* leeway any more.

He has also largely used up the options for restraining expenditures by drawing down inventories and reducing trained forces outside the war theatre. McNamara has vigorously insisted that "we have a great reservoir of resources," and he is undoubtedly right about that, especially if "a great reservoir" is interpreted to include the potential capacity of the U.S. economy to produce military goods. But he has overstated his case by arguing, in effect, that the Vietnam war has not reduced readiness at all ("* * * far from overextending ourselves,

we have actually strengthened our military position"). Counting peripheral supporting forces, the United States now has about 300,000 men deployed in the Vietnam war theater, and (in keeping with that 1-to-1 ratio) another 300,000 men are committed to backing them up. That makes 600,000 men unavailable for other contingencies. Since the low point in May 1965, U.S. military manpower has increased by approximately 400,000 (this figure allows for substitution of civilians for uniformed personnel), and a lot of those 400,000 are men still in training. It would be remarkable indeed if all this had somehow "strengthened our military position."

Nor is there much left to draw down in military inventories. As shown in the middle row of charts on pp. 506-8, Defense Department expenditures for procurement declined sharply in fiscal 1965—by \$3.5 billion, in fact. This decline in procurement apparently contributed to the Army shortages (of repair parts, communication equipment, helicopters, and trucks, among other things) discovered early last year by investigators of the U.S. Senate's Preparedness Investigating Subcommittee, headed by Mississippi's Senator John Stennis. Pentagon witnesses tried to explain that the "shortages" were mere routine gaps between reality and ideal tables of equipment. But at one point South Carolina's Senator Strom Thurmond pinned down two Pentagon generals in this exchange:

Senator THURMOND. You have not denied those shortages, have you, General Abrams?

General ABRAMS. No.

Senator THURMOND. And you have not, General?

General CHESAREK. No.

Senator THURMOND. You do admit the shortages?

General CHESAREK. Yes, sir.

The combination of rising Vietnam requirements and thin, declining inventories led last year to surges in military production and orders far beyond what can be inferred from the official estimates of expenditures attributable to the Vietnam war. In the second half of calendar 1965, Defense Department prime contract awards ran \$3.3 billion ahead of the corresponding period of 1964—\$6.6 billion at an annual rate. In contrast, the Defense Department estimates fiscal 1966 expenditures for the Vietnam war at only \$4.6 billion. Anyone trying to catch an intimation of things to come might do well to keep an eye on orders, rather than expenditure estimates. Orders are for real: if you want the stuff delivered in time, you've got to order it in time. But expenditure estimates are not binding upon anybody.

TRYING TO AVOID THE PILE-UP AT THE END

Since they are not for real, budgetary expenditure estimates are an exceedingly unreliable guide to the future. A better guide can be found in requests for appropriations. For the fiscal years 1966 and 1967 combined, the Defense Department has estimated Vietnam war expenditures at \$15 billion, but for the same 2 fiscal years the department has already requested approximately \$23 billion in Vietnam war appropriations.

Big as they look, however, these requests for war appropriations will almost certainly be added to long before the end of fiscal 1967. That probability can be inferred from on-the-record statements by Secretary McNamara and other Defense Department witnesses at congressional hearings.

The Defense Department has based its requests for war appropriations not upon a forecast of what will actually happen in the Vietnam war, but upon what a Pentagon official calls "calculated requirements." In calculating the "requirement" for any procurement item, the department considered the lead time—how far ahead you have to order the item to have it when you need it. For complex or precisely tooled military hardware, lead times may run to a year or more, and for such items—particularly aircraft and aircraft spares—the department allowed fully for expected losses and use-up to the end of fiscal 1967. But for items with shorter lead times, requirements were calculated tightly, on the assumption that later on they could be revised and McNamara could ask for supplemental appropriations.

Supplemental appropriations have come to be viewed as natural in wartime. And McNamara's policy of asking for funds "at the last possible moment," as he puts it, has its merits. By following that policy he hopes to avoid "overbuying" and any pileup of surplus materiel at the end of the war. (When the Korean war ended, the Military Establishment had billions of dollars worth of excess goods in stock or on order.) But the policy implies that the Defense Department will have to ask for more funds before the end of fiscal 1967 unless there is some unexpected abatement in the war.

Of necessity, the 1967 defense budget was constructed upon working assumptions about how big the war will get and how long it will last, and given all the uncertainties, these cannot be expected to coincide with the realities. In estimating expenditures and appropriations for fiscal 1967, the Defense Department assumed that U.S. "combat operations" in Vietnam will not continue beyond June 30, 1967. In keeping with that assumption, the 1967 budget does not provide funds for orders of aircraft or other military goods to replace combat losses after that date. Here again the assumption implies that the Defense Department will need supplemental appropriations in fiscal 1967 if the war continues at even the present rate.

McNamara has not said in public what U.S. force level in South Vietnam is allowed for in the 1967 budget, and the explanations he has offered at congressional hearings have been deleted by Pentagon censors. But at a Senate hearing in January, Gen. John P. McConnell, the Air Force Chief of Staff, indicated that, for the Air Force at least, the appropriations requested so far allow for little or no expansion of the war beyond the 200,000-man level. Said McConnell in reply to a question concerning the adequacy of the funds requested: "We don't have any problem if the war continues at about the same rate as now, Mr. Chairman."

These budgeting assumptions expressed and implied by McNamara and other Pentagon witnesses lead to a strong inference: by next January, if the war continues unabated until then at even the present rate, the Defense Department will have to ask for supplemental appropriations for long-lead-time items required in fiscal 1968 and shorter leadtime items required in the last months of fiscal 1967. Some months before next January, indeed, perhaps this summer, the department will have to begin ordering very long leadtime items in anticipation of fiscal 1968 combat losses.

MOUNTING ASTONISHMENT AT THE BAD NEWS

It follows that if the U.S. buildup in South Vietnam proceeds to a much higher level, the supplemental requests will run into many billions before the end of fiscal 1967. And since the Military Establishment will have to procure a lot of additional equipment and supplies and bring in a lot of additional men, defense expenditures will rise billions of dollars above the estimate submitted last January.

So the 1967 budget barely begins to suggest the level of Vietnam war spending that probably lies ahead. The budget is not misleading once its rather sophisticated underlying assumptions are understood; but the assumptions are *not* widely understood, and the administration has not made much of an effort to see that they are. There is likely to be mounting astonishment this year and next as the bad news about the war's costs and the implied message about taxes and inflation sink in. It's a good bet that Americans will still consider the war worth winning. There is no reason for them not to know its cost.

BUDGET POLICY IN A HIGH-EMPLOYMENT ECONOMY

The Federal budget for fiscal 1967,¹ presented to Congress on January 24, provided for substantial increases in both expenditures and revenues during the remainder of fiscal 1966 and for further increases in fiscal 1967. According to the administration's budget plan, the excess of expenditures over revenues (i.e., the deficit) is expected to increase from fiscal 1965 to 1966 and then to decline in fiscal 1967.

This article focuses on the implications of the Federal budget for economic stability in calendar 1966. To assist in the analysis, several alternative measures of budget policy are examined, and some economic principles are reviewed. Prospects for Federal taxes and expenditures may be substantially different now from what they were when the budget was prepared. Nevertheless, it is believed that this article, based on the January budget report, will promote understanding of the budget plan in light of the current economic environment.

MEASURES OF BUDGET POLICY

The fiscal activities of the Federal Government can be summarized in several ways. Some alternative budget concepts and the relationships between them are discussed in the following sections.² Table I provides a reconciliation of these budget concepts, with data for fiscal 1965-67 used for illustration.

¹ The Federal Government's fiscal year runs from July 1 to June 30 and is designated by the calendar year in which it ends.

² The term "budget" is used loosely here. There is in fact only one Federal "budget" in the sense of a financial plan, and that is the administrative budget. All other "budgets" discussed here are summary statements of receipts and expenditures classified in various ways for purposes other than administrative planning.

TABLE 1.—*Reconciliation of various measures of Federal receipts and expenditures*

[In billions of dollars]

	Fiscal year—		
	1965 actual	1966 estimate	1967 estimate
RECEIPTS			
Administrative budget receipts.....	93.1	100.0	111.0
Plus: Trust fund receipts.....	31.0	33.5	41.6
Less:			
Intragovernmental transactions.....	4.3	4.5	5.5
Receipts from exercise of monetary authority.....	.1	.9	1.6
Equals: Federal receipts from the public.....	119.7	128.2	145.5
Less: Cash transactions excluded from Federal receipts account (District of Columbia, financial transactions, etc.).....	1.0	.6	.7
Plus: Items added to Federal sector account but not in cash receipts (netting differences, timing differences, etc.).....	.9	1.2	-2.6
Equals: Federal receipts, national income accounts.....	119.6	128.8	142.2
Plus: Adjustment for tax receipts because of deviation of economy from high employment.....	5.9	2.0	.5
Equals: High-employment receipts.....	125.5	130.8	142.7
EXPENDITURES			
New obligational authority.....	106.6	126.0	121.9
Plus: Authorizations enacted in prior year but spent in current year.....			30.7
Less: Expenditures to be made in future years.....			39.8
Equals: Administrative budget expenditures.....	96.5	106.4	112.8
Plus: Trust fund expenditures.....	29.6	33.8	37.9
Less:			
Intragovernmental transactions.....	4.3	4.5	5.5
Debt issuance in lieu of checks and other adjustments.....	-6	.7	.2
Equals: Federal payments to the public.....	122.4	135.0	145.0
Less: Cash transactions excluded from Federal expenditures account (District of Columbia, financial transactions, etc.).....	5.8	4.0	1.6
Plus: Items added to Federal sector account but not in cash payments (netting differences, timing differences, etc.).....	1.7		-7
Equals: Federal expenditures, national income accounts.....	118.3	131.0	142.7
Plus: Adjustment for expenditures because of deviation of economy from high employment.....	-2	-2	.2
Equals: High-employment expenditures.....	118.1	130.8	142.9
SURPLUS OR DEFICIT			
Administrative budget.....	-3.4	-6.4	-1.8
Cash budget.....	-2.7	-6.9	+5
National income accounts budget.....	+1.2	-2.2	-5
High-employment budget.....	+7.4	0	-2

Sources: *The Budget of the United States Government for the Fiscal Year Ending June 30, 1967*, pp. 47, 377, and Federal Reserve Bank of St. Louis.

ADMINISTRATIVE BUDGET

The administrative budget is the basic planning document of the Federal Government, covering receipts and expenditures of funds that it owns. Its main purpose is to serve as a guide to executive and legislative program planning, review, and enactment. Those agencies for which Congress makes regular appropriations are included in the administrative budget; activities of trust funds (social insurance, highway, etc.), quasi-public agencies (e.g., Federal home loan banks), and self-financing agencies are excluded.

Expenditures and receipts are generally recorded on a cash basis, i.e., on the date of actual receipt or payment. Interest expense is on an accrual basis.

CASH BUDGET

The consolidated cash budget is a summary statement of cash flow between the Federal Government and other sectors of the economy. Included are activities of the regular Government agencies found in the administrative budget plus the activities of trust funds and Government-sponsored agencies. Because activities of some agencies (e.g., the post office) are recorded on a net basis, the full magnitude of cash flows between the Federal Government and other sectors of the economy is not measured by the cash budget.

The cash surplus or deficit serves as a measure of the direct impact of Federal Government spending and taxation on the financial assets of the private sector of the economy (including State and local governments). Surpluses or deficits in this budget indicate changes in the public debt and/or changes in the Treasury's cash balance.

NATIONAL INCOME ACCOUNTS BUDGET

Federal Government activities in the national income accounts are restricted to receipts and expenditures which reflect the direct impact of Federal spending and tax programs on the flow of current income and output. This measure is obtained by making two major adjustments in the cash budget.

First, capital transactions adjustments exclude expenditures on existing assets and loans (or loan repayments). Second, timing adjustments are made. Expenditures are recorded when delivery is made to the Government (whereas the cash budget records spending at the time of payment). Tax receipts are recorded when the tax liability is incurred (whereas the cash budget records them when collected).

HIGH-EMPLOYMENT BUDGET

The high-employment budget is an estimate of expenditures and revenues in the Federal sector of the national income accounts for a level of high employment.³ It is an attempt to correct the distortion introduced by the impact of the economy itself (through the effect of changing levels of economic activity on Government expenditures and tax receipts) on the realized surplus or deficit. The smaller the surplus or greater the deficit in this budget, the more stimulative is the impact of Federal fiscal activities and the less is the dependence on private demand to maintain high employment.

NEW OBLIGATIONAL AUTHORITY

In evaluating the impact of the Federal Government on the economy, another measure of particular importance is "new obligational authority." This is legislation by Congress permitting a Government agency or department to commit or obligate the Government to certain expenditures. Congress does not vote on expenditures; it determines new obligational authority. Before funds can be spent, an agency must submit and have approved by the Bureau of the

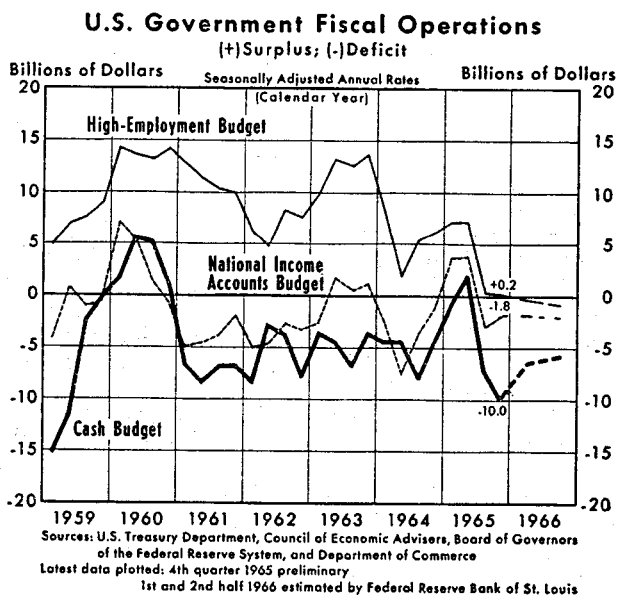
³ The President's Council of Economic Advisers defines a high-employment level of economic activity as that level associated with a 4 per cent unemployment rate. The high-employment budget could be computed for other budget concepts, but, for an analysis of the economic impact of the budget, the national income accounts basis seems most appropriate. For a description of techniques and procedures for calculating high-employment budget estimates, see Nancy H. Teeters, "Estimates of the Full-Employment Surplus, 1955-1964," *The Review of Economics and Statistics*, XLVII (August 1965), 309-321.

Budget an apportionment request. This determines the rate at which obligational authority can be used. An agency usually incurs obligations, i.e., commits itself to pay out money, after apportionment by the Bureau of the Budget.

Incurring obligations does not necessarily mean immediate cash expenditures. When the Government buys goods and services produced by the private sector, the lag of expenditures behind obligations may be substantial. In the case of items not usually kept in inventory, like military hardware, it usually takes time for private producers to draw plans, negotiate subcontracts, produce and deliver the product.

BUDGET POLICY IN FISCAL 1966-67: FACTS AND FIGURES

Budget plans for future months indicate marked increases in both expenditures and receipts. This obtains for any one of the four major budget measures discussed above. Generally, according to the budget plan, deficits will become larger in fiscal 1966 compared with fiscal 1965, then turn toward surplus in fiscal 1967 (table I).



OBLIGATIONAL AUTHORITY

New obligational authority (table II) jumps to an estimated \$126 billion in fiscal 1966 from \$106.6 billion in fiscal 1965. Included in this \$19.4 billion increase is \$11.4 billion for defense, international, and space and \$4.6 billion for health, education, welfare, and related programs.

TABLE II.—*Changes in Federal spending and obligational authority*

(In billions of dollars)

	Fiscal 1965 to fiscal 1966	Fiscal 1966 to fiscal 1967
Cash payments to the public:		
Defense, international, and space.....	+6.6	+4.0
Domestic.....	+6.0	+6.0
Health, education, welfare, and community development.....	+7.7	+4.9
Interest on public debt.....	+7	+9
Other.....	-2.4	+2
Total.....	+12.6	+10.0
New obligational authority:		
Defense, international, and space.....	+11.4	-4.1
Domestic.....	+8.0	-----
Health, education, welfare, and community development.....	+4.6	+1.0
Interest on public debt.....	+7	+8
Other.....	+2.7	-1.8
Total.....	+19.4	-4.1

Source: *The Budget of the United States Government for the Fiscal Year Ending June 30, 1967*, pp. 41, 439.

Projections for fiscal 1967 are for a decrease in obligational authority to \$121.9 billion, reflecting a decline of \$4.1 billion for defense, international, and space.⁴ Obligational authority for all domestic civilian programs is expected to be unchanged from fiscal 1966 to 1967.

EXPENDITURES

The pattern of Federal cash payments in fiscal 1966 and 1967 is quite different from that of obligational authority. Payments are estimated at \$135 billion in fiscal 1966 and \$145 billion in fiscal 1967 compared with \$122.4 billion in fiscal 1965.

Expenditures are projected to increase in fiscal 1967 but by a smaller amount than in fiscal 1966. Defense, international, and space spending is expected to increase \$4 billion, while domestic civilian spending is scheduled to rise by \$6 billion.

Reflected in the expenditure totals for fiscal 1966 and 1967 is a proposed substitution of private for public credit. The proposal involves asset sales of \$3.3 billion in fiscal 1966 and \$4.7 billion in fiscal 1967 compared with \$1.6 billion in fiscal 1965.⁵ These asset sales are to include mainly pooled loans of several Federal agencies (Export-Import Bank, Federal National Mortgage Association, and the Veterans' Administration). Because such sales are netted against expenditures in the Government's accounting system, actual outlays stated in the budget are understated by the amount of asset sales.

The discrepancy between changes in new obligational authority and cash payments to the public from fiscal 1966 to fiscal 1967 implies that the pool of authorized but unspent funds will be built up in fiscal 1966, then drawn down in fiscal 1967. This conclusion rests on the assumption that there will be no supplemental appropriations required for Vietnam.

⁴ Note that there is a decline because obligational authority is extraordinarily high in fiscal 1966, reflecting large supplemental appropriations for financing the war in Vietnam.

⁵ There is some indication that asset sales will fall short of budgeted totals in fiscal 1966. A sale of Export-Import Bank participation certificates in February totaled \$360 million out of \$700 million offered.

RECEIPTS

Federal cash receipts are estimated to rise sharply, especially from fiscal 1966 to 1967. Increases in receipts for fiscal 1966 reflect mainly growth in the economy, while collections in fiscal 1967 are expected to reflect changes in tax laws as well as growth.

Cash receipts in fiscal 1966 are expected to be \$128.2 billion, up \$8.5 billion from fiscal 1965. This increase (table III) reflects the excise tax cut in the summer of calendar 1965, restoration of excise taxes on automobiles and telephone service in the first half of calendar 1966, speedup of corporate and individual income taxes early in calendar 1966 and the social security tax increase that went into effect on January 1, 1966. The net effect of these and other minor tax changes is expected to be an increase of \$9 billion in receipts. The bulk of the remaining \$7.6 billion increase in receipts can be explained by growth in the economy.

TABLE III.—Changes in Federal receipts

[In billions of dollars]

	Fiscal 1965 to fiscal 1966	Fiscal 1966 to fiscal 1967
Changes due to changes in tax law:		
Excise tax reduction.....	-1.8	-1.2
Reimposed excise taxes.....	+1.1	+1.2
Individual income tax speedup.....	+1.1	+1.4
Corporate income tax speedup.....	+1.0	+3.2
Social security tax increase.....	+1.6	+5.2
Social security tax speedup (self-employed).....	+1.1	+1.1
Other tax changes.....	-2.2	
Total.....	+9.9	+8.9
Changes due to growth in economy and other factors ¹	+7.6	+8.4
Total change in receipts.....	+8.5	+17.3

¹ Includes receipts from estate and gift taxes, customs, other miscellaneous sources (e.g., sales of Government property), trust fund receipts from sources other than social security and excise taxes, and adjustments for intragovernmental transactions.

Source: Estimated by Federal Reserve Bank of St. Louis from the *Budget of the United States Government for the Fiscal Year ending June 30, 1967*.

The tax program designed for fiscal 1967 is somewhat different from that for fiscal 1966. Receipts are expected to rise by \$17.3 billion. Changes in tax legislation, primarily a speed-up of corporate tax collections and an increase in social security tax rates scheduled for January 1, 1967, are expected to provide over half of the increase. The restoration of auto and telephone excise taxes has the effect of offsetting the decline in collections that would have been experienced in the absence of legislation. Continued growth in the economy is expected to provide the bulk of the remaining \$8.4 billion increase.

SUMMARY

Federal budget expenditures and receipts are both estimated to rise sharply in the 18-month period ending June 30, 1967. The cash budget deficit is expected to increase in fiscal 1966 but turn toward surplus in fiscal 1967. The basis for such a projection lies in an estimate of expected increases in receipts, mainly from increased social security tax collections and growth in the economy. In addition, certain "one-shot" proposals—tax speedup and sales of financial

assets—will have the effect of reducing the deficit, especially in fiscal 1967.

BUDGET POLICY IN CALENDAR 1966: ECONOMIC EFFECTS

The above facts and figures on the Federal budget have important implications for economic stability in coming months. To assist in the understanding of these implications, some basic principles of economic analysis are reviewed. This framework is then used to analyze the administration's fiscal plans within the economic setting expected in calendar 1966.

The following section presents a theoretical framework for analyzing the effects of the Federal budget on the level of economic activity. Also, the terminology used in later sections of this article is introduced here. The reader who is not interested in the analytical framework may proceed directly to the next section, "Economic Setting."

ANALYTICAL FRAMEWORK⁶

The level of economic activity is determined by the saving and spending propensities of households, businesses, governments, and foreigners.⁷ The most comprehensive measure of economic activity is gross national product (GNP)—the total value of final goods and services produced in a given time period. GNP can be measured by summing all expenditures or by summing all incomes. All production can be thought of as being bought; thus, the total product can be measured by gross national expenditure (*GNE*) on this product. Similarly, all production has income charges against it equal in value to what is produced; thus, the total product can be measured by gross national income (*GNY*). This definitional relationship between total product, total expenditure, and total income can be expressed as follows (where triple bar, $\equiv$, means "identically equals"):

$$(1) \text{GNP} \equiv \text{GNE} \equiv \text{GNY}$$

Gross national expenditure (*GNE*) can be divided into its major components—consumption (*C*), investment (*I*), and government purchases (*G*). Gross national income (*GNY*) must be allocated to consumption (*C*), savings (*S*), and taxes (*T*). Equation (1) can be rewritten, expressing *GNE* and *GNY* as the sum of their components:

$$(2) C + I + G \equiv C + S + T$$

where:

- C* = personal consumption expenditures;
- I* = gross private investment;
- G* = government purchases of goods and services;
- S* = gross private saving;
- T* = net government receipts.

Both *GNE* and *GNY* contain consumption (*C*). As a part of *GNE*, consumption is spending on consumer goods and services. As an allocation of *GNY*, consumption is that portion of income spent on

⁶ This section draws heavily from Robert Solomon, "A Note on the Full Employment Budget Surplus," *The Review of Economics and Statistics*, XLVI (February 1964), 105-108.

⁷ All terms are defined so as to be consistent with the national income accounts framework. Investment is defined to include gross private domestic investment and net foreign investment; private saving includes both personal and business saving; government purchases are for Federal, State, and local governments; and net government receipts are essentially taxes net of transfer payments.

consumer goods and services. Both statements refer to the same magnitude. For convenience, consumption (C) can be ignored, and attention focused on the remainder of $GNP(I+G)$ and the remainder of $GNP(S+T)$. Dropping consumption (C) from both sides of equation (2) leaves:

$$(3) \quad I+G \equiv S+T.$$

Government expenditures (G) can be netted against receipts (T), yielding government saving ($T-G$). The resulting expression shows that investment (I) is identically equal to total savings [$S+(T-G)$]:

$$(4) \quad I \equiv S+(T-G).$$

In an accounting sense, saving and investment are always equal, regardless of the level of GNP. However, accounting definitions of saving and investment do not themselves provide an explanation of the dynamic forces that cause GNP to be what it is. Nevertheless, the concepts are useful in developing a framework for understanding what determines GNP.

Although *measured* saving and investment are always equal, *planned* saving and investment are not. Saving and investment are performed largely by different groups; each group is motivated by its own set of considerations. An attempt by businesses to invest more than is willingly saved by households, businesses, and governments sets in motion forces causing GNP to increase. Under such circumstances injections of investment expenditures into the income-expenditure stream exceed the leakages of private and government saving from it. An excess of injections over leakages leads to an increase in GNP. The rise in GNP continues to a level where planned saving and investment are brought into balance.

Whether an economy achieves high employment with stable prices (i.e., an optimal GNP)⁸ depends on the relation between planned saving and investment at that specified level of economic activity. If investment falls short of planned saving at high employment, GNP will fall short of its optimal level and unemployment will result. On the other hand, if planned investment exceeds planned saving at high employment, GNP will exceed its optimal level and prices will rise. In terms of equation (4) these conclusions may be summarized as follows (where the subscript H denotes "high-employment value"):

Relation between planned saving and investment at high employment	Result
I_H less than $S_H+(T_H-G_H)$	GNP falls short of its optimal level
I_H equals $S_H+(T_H-G_H)$	GNP achieves its optimal level
I_H greater than $S_H+(T_H-G_H)$	GNP exceeds its optimal level

Understanding why GNP exceeds or falls short of its optimal level is crucial to the policy formulation process. Within the analytical framework discussed above, the problem reduces to an analysis of the discrepancy between high-employment values of saving and investment. If a discrepancy exists, policy measures can be instituted which will restore GNP to its optimal level.

⁸ This discussion ignores possible inconsistencies between high employment and stable prices. Choice of an optimal GNP probably involves a "tradeoff" between an increase in employment and a rise in the general level of prices.

To make the saving-investment framework operationally useful for policy formulation purposes, it is helpful to make certain assumptions. Private saving (S) and net Government receipts (T) are quite predictably related to GNP, and their values can be estimated for an optimal level of GNP. Investment (I) and government spending (G) are not so predictably related. Investment is subject to numerous influences in addition to the level of GNP, an important one being monetary actions. Government spending is largely determined by noneconomic elements, especially of a political character. Thus, we may assume that planned high-employment levels of investment and Government spending are approximated by their observed values. In terms of the algebra, the H subscript is dropped from I and G .

With these assumptions, we may (1) state the appropriate magnitude of government saving ($T_H - G$) needed to achieve optional GNP, given the relation between actual investment and planned high-employment private saving ($I - S_H$), or (2) state the amount of investment needed to close the high-employment savings-investment gap ($I - S_H$), given the magnitude of government saving ($T_H - G$). The first interpretation indicates the fiscal actions required to achieve optimal GNP, given monetary actions; the latter specifies the required monetary actions as they influence investment, given fiscal actions.

By regrouping equation (4) and denoting high-employment values, these interpretations of the saving-investment framework can be summarized as follows:

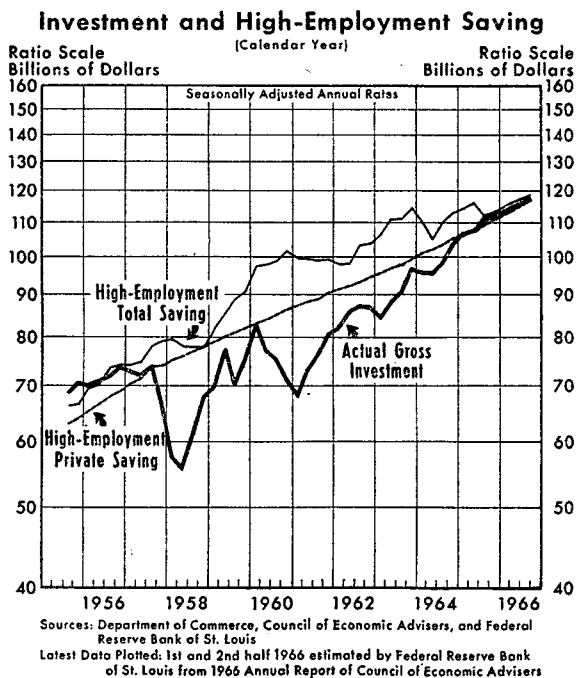
$$(5) \quad I - S_H = T_H - G.$$

The left-hand side of equation (5) indicates the private sector of the economy, the right-hand side, the Government sector. The larger is high-employment Government saving ($T_H - G$), the more investment (I) must exceed saving (S_H) if high-employment with stable prices is to be achieved. Alternatively, the more investment (I) exceeds saving (S_H), the larger must be high-employment Government saving ($T_H - G$) if optimal GNP is to be achieved.

ECONOMIC SETTING

Economic activity advanced strongly in calendar 1965, continuing the expansion which began in early 1961. GNP rose 5.5 percent in real terms and unemployment approached 4 percent of the labor force late in the year. Fiscal and monetary actions provided a strong stimulus to the economy during calendar 1965.

Recent economic experience in a saving-investment framework. With reference to the framework outlined above, actual investment approached planned high-employment saving during calendar 1965, resulting in high employment and production. This was the first time since late in 1956 that actual investment and planned high-employment saving were so nearly in balance.



From calendar 1957 to mid-1965, high-employment saving exceeded actual investment. The source of discrepancy can be attributed to two primary factors—the amount of investment spending and the level of high-employment government (Federal, State, and local) savings.

The historical record indicates the importance of monetary and fiscal actions in influencing economic activity. Federal fiscal actions are reflected directly in high-employment saving and in investment. In addition, saving and investment, particularly the latter, are responsive to monetary actions via interest rates. The period since 1961 has been marked by very stimulative monetary actions, while fiscal actions have been stimulative at some intervals during the period.

Stimulative fiscal actions during the 1961–65 period included a rising trend of Federal expenditures during the period, revised depreciation guidelines and an investment tax credit in calendar 1962, reduced income tax rates for individuals and corporations in calendar 1964 and 1965, and reduced excise tax rates in mid-1965. These actions were offset in part by an increase in social security tax rates in calendar 1963 and the normal growth of revenues associated with the upward trend in income and employment.

Prospects for economic activity in calendar 1966. The Council of Economic Advisers (CEA) has forecast GNP and its components for calendar 1966 (without, however, providing a distribution between halves). This forecast takes into consideration fiscal plans and, supposedly, an implicit assumption about monetary policy. The forecast

for GNP is \$722 billion for the calendar year 1966 as a whole.⁹ This suggests that GNP will be about \$711 billion in the first half and \$733 billion in the second.

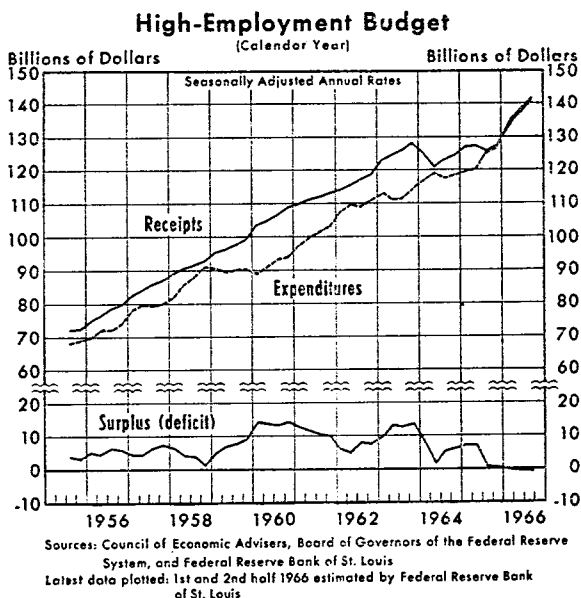
The composition of the forecast increase in GNP in calendar 1966 does not differ markedly from previous years. Federal purchases of goods and services are scheduled to rise more rapidly, while consumer spending, plant and equipment expenditures, and state and local government outlays are expected to continue their steady advance.

Actual gross investment and high-employment saving are expected to be in approximate balance. It is this relation that underlies the CEA's belief that high employment can be maintained without excessive price inflation. Any tendency for investment to outrun high-employment saving would indicate excessive total demand and be reflected in increased prices.

BUDGET POLICY IN ITS ECONOMIC SETTING

Budget policy is outlined in the budget document on a fiscal year basis; the annual report of the Council of Economic Advisers provides additional insight into the implications of the budget for calendar 1966. The last section of this article attempts to analyze planned budget policy for calendar 1966.

High-employment budget. The high-employment budget is expected to move from a small surplus (Federal Government saving in terms of our analytical framework) in the second half of calendar 1965 to a slight deficit in the first half of calendar 1966. This fiscal stimulus arises from an increase of expenditures in excess of the restrictive measures on the receipts side—viz, rescinding of excise tax



⁹ Since the publication of the CEA report the GNP estimate for the fourth quarter of 1965 has been revised upward by \$2.6 billion. This statistical revision implies an increase in the CEA forecast from \$722 billion to nearly \$725 billion. Furthermore, data for the first 3 months of 1966 indicate that economic activity may be advancing even more rapidly than the CEA expected.

cuts on automobiles and telephone service, increased social security tax collections, speedup of individual and corporate tax collections, and normal growth in revenues as the economy expands.

The second half of calendar 1966 also is expected to show a net fiscal stimulus; the high-employment budget is expected to move toward a larger deficit of about \$1 billion. Planned increases in expenditures are expected to be larger than the growth in receipts. Increases in receipts will have to flow almost entirely from rising incomes, because no tax increases are scheduled in the budget plan for the second half of calendar 1966. Graduated withholding of personal income taxes may dampen purchasing power somewhat, but the impact is not expected to be large. The speedup in corporate tax collections is not designed to change payment schedules in the second half of calendar 1966.

In the first half of calendar 1967 the high-employment budget is expected to show a surplus as the rate of increase of expenditures tapers off and receipts continue to climb because of rising incomes. Estimates so far in the future are not reliable, however, because of many contingencies and uncertainties, particularly regarding the war in Vietnam.

Fiscal plans and economic setting—An evaluation. Budget policy in calendar 1966 as presented in the CEA report is predicated on the belief that actual gross investment will be approximately equal to planned high-employment private saving. High-employment government saving is expected to be slightly more than \$2 billion, consisting of a State and local government surplus partly offset by a slight deficit in the high-employment Federal budget.

Of critical importance in judging the economic impact of the Federal budget is whether a dollar of receipts restrains private demand by a like amount. An implication of the high-employment budget as a measure of fiscal impact is that a dollar of increased expenditure has the same economic effect as a dollar decline in tax receipts. The validity of this assumption is especially important when it is noted that the budget program for calendar 1966 plans a near balance in the high-employment budget but includes marked increases in both expenditures and receipts. If a dollar increase in tax receipts does not restrain private spending by the same amount, the high-employment budget understates its fiscal impact.

As noted above, the national income accounts measure Government purchases at the time of delivery. Thus, the high-employment budget may not be entirely accurate as a measure of fiscal impact for this reason. If the flow of Government orders is relatively smooth, the Government expenditure series may accurately measure the impact of the budget on the economy over time. However, at times of sharp changes in Government orders, the economic effects of the change are not recorded in the budget accounts until the goods have been delivered.¹⁰

Such a factor may be particularly relevant early in calendar 1966. Increases in Government spending are projected over the current fiscal year (fiscal 1966) and the next, but new obligational authority

¹⁰ For a discussion of this view of the Government spending process and its relevance for the 1967 Federal budget, see Murray L. Weidenbaum, "The Inflationary Impact of the Federal Budget," Washington University Working Paper 6529 (Feb. 10, 1966).

is soaring this fiscal year and is scheduled to taper off in fiscal 1967. If it is the order stage of the Government spending process rather than the delivery stage which is relevant for measuring fiscal impact, the effect of projected increases in Government expenditures may be having its major impact currently (in the first half of calendar 1966).

Another implication following from this thesis is that the economic stimulus of the current defense buildup may evaporate late in calendar 1966 or early in calendar 1967 if the scheduled changes in obligational authority are realized.

The Council's economic plans appeared to be internally consistent at the time of publication of their report in late January. These plans, however, left little margin for error, even within their analytical framework. Any unexpected increase in expenditures would require offsetting fiscal or monetary actions. Granting their assumptions about expenditures, receipts, and the level of GNP, there is some question whether budget policy was designed to restrain total demand sufficiently to avoid price inflation, given the shortcomings of the high employment budget as a measure of fiscal impact.¹¹

Since late January major measures of economic activity have indicated that total demand is rising more rapidly than the Council anticipated in their report. Within the saving-investment framework, it appears that planned investment is in excess of planned high-employment private saving. Such a situation would be appropriate if offset by high-employment government saving. This does not appear to be the case; it seems likely that the Federal Government is experiencing a high-employment deficit which is not being offset by a state and local government surplus.

Given this fiscal stance, investment and high-employment total saving (private and government) can be brought into equality by policy action designed to (1) discourage investment and/or (2) encourage private saving.¹² A failure to do one or both will result in price increases.

Unless fiscal plans are changed, the aim of monetary policy should be to dampen investment plans and to encourage private saving via higher interest rates, thereby reducing inflationary pressures. Higher interest rates would also be beneficial to the balance of payments by keeping U.S. prices competitive with the rest of the world and by reducing capital outflows. While such higher interest rates may have some social disadvantages, they may be more than offset by the benefits of stable prices and an improved balance of payments.

KEITH M. CARLSON.

¹¹ This is not to imply that the Council is not aware of these shortcomings. See the testimony of Gardner Ackley, Chairman of the Council of Economic Advisers, before the Subcommittee on Fiscal Policy of the Joint Economic Committee, July 20, 1965.

¹² Administration statements in recent weeks have indicated a possible move in the direction of fiscal restraint if price pressures continue in evidence. An increase in individual and corporate tax rates would increase Government saving and tend to discourage investment.

THE OUTLOOK FOR DEFENSE SPENDING—HOW GREAT AN UNCERTAINTY?*

BY WILLIAM H. CHARTENER, Economist, Goldman, Sachs & Co.

During the current business forecasting season a hedge that is fast overtaking the privet and the boxwood in popularity is the uncertainty occasioned by the war in Vietnam. This, we are told, makes the economic outlook for 1967 unusually hazardous to forecast. In some of the more tremulous analyses, the forecaster confesses disarmingly that he really has no idea what will happen—but if it does, all bets are off,

In the popular sense of the word “uncertain,” this approach has some validity. Conceivable developments in Vietnam range all the way from an abrupt withdrawal of U.S. forces to a thermonuclear war with Communist China and the Soviet Union. Defense spending might, conceivably, drop \$10 billion (annual rate) by the end of 1967, or increase \$50 billion—with a comparably wide range of implications for the economy.

In a statistical sense, however, the “uncertainty” attached to the outlook for the war and for defense spending is subject to more precise and more useful definition. A forecast of defense spending through the end of 1967 made now does involve somewhat more uncertainty than a forecast of corporate depreciation, consumer expenditures for services, electric power generation, the tides, or California weather in August. But it involves *less* uncertainty—in the sense of probable relative error—than a forecast of auto sales, housing starts, inventory accumulation, the balance of payments, the stock market, or California weather in December.

Specifically, I shall put my view of the outlook for defense spending in these terms: *Defense spending on the Commerce or gross national product basis appears likely to continue increasing at an annual rate of about \$1 billion a quarter through next spring, then \$1 billion a quarter to the end of 1967. This would mean total defense purchases of goods and services of \$65 billion in the calendar year 1967, up from about \$58 billion in 1966 and \$50 billion in 1965. On the administrative budget basis, I expect defense spending (including atomic energy) to total \$66 billion in the 1967 fiscal year, as compared with the \$57.7 billion now officially estimated for fiscal 1966 and \$60.5 billion estimated for 1967 in last January's budget.*

To attach numerical though highly subjective value to the “uncertainty” surrounding these figures, my current impression is that there is a 70-percent probability—or about a one sigma range—that defense spending in 1967 will fall within \$2 billion plus or minus of the estimates on the two bases. Outside this central range, the distribution becomes quite skewed: I would assign only a 5-percent probability to defense expenditures being lower than these estimates by more than \$2 billion and the remaining 25 percent to the wide open upper range.

* Paper presented before the Annual Meeting of the American Statistical Association, Los Angeles, Aug. 18, 1966.

In quoting odds on the outlook for defense spending, I do not mean in any way to minimize the gravity of the war in Vietnam or the seriousness of its implications for the U.S. economy. My purposes are two:

- (1) To observe that the business forecaster does not discharge his obligation when he characterizes an important set of determinants of his forecast as "uncertain" without providing some guide to the probable configuration; and

- (2) To emphasize that, in being bemused by the less likely extreme courses the war in Vietnam and defense spending *can* take, one may lose the practical economic advantages and the psychological security that are apt to flow from confident action premised on the more probable central range.

From this point our analysis will concentrate on what seems to me to be a narrowing degree of uncertainty regarding the dimensions of the war in Vietnam and total defense spending in 1967.

THE PATTERN OF ESCALATION

Special costs of the war in Vietnam accounted for only 10 percent, or \$5.8 billion, of total budget expenditures for defense in fiscal 1966. But most of the increase in defense spending occurring in 1966 and anticipated for 1967 results from Vietnam. Both in dollar amount and in percentage of total defense spending, Vietnam outlays will probably be at least twice as great in fiscal 1967 as in 1966.

Escalation of the U.S. military effort in Vietnam has been gradual, over a period of a dozen years and three presidential administrations, beginning with the assignment of military advisers and now including intensive bombing of military targets in North Vietnam and the demilitarized neutral zone. Escalation on the part of the Vietcong and North Vietnam, both on their own initiative and in response to U.S. efforts, likewise has been gradual.

Despite the gradual nature of this progression, two points in time can be identified as involving major shifts in the scale of the U.S. effort in Vietnam and major changes in the prospective magnitude and pattern of defense spending.

The first shift came in the summer of 1965, when U.S. forces assumed direct and open responsibility for combat operations in Vietnam. The President then requested a supplemental defense appropriation of \$1.7 billion and promised to return for more in January 1966. (Vietnam, incidentally, had come in for scarcely any mention at all in the January 1965 budget.) At the time of this change in scale of effort, the *outlook* for defense spending changed from essentially flat to a rise of at least a billion dollars a quarter.

The second important shift came last winter when the President and the Defense Department gained a fuller appreciation of the costs of achieving their objectives in Vietnam. The President then requested a \$12.8 billion supplemental appropriation for Vietnam and budgeted a large increase in defense outlays. On the basis of the January 1966 budget and other official statements last winter, the *outlook* for defense spending changed again, implying a rise at a rate of about \$2 billion a quarter for several quarters. It was then that the figure of 400,000 began to be mentioned as the target for deployment of U.S. military personnel in Vietnam by the end of 1966.

There appears to have been no further basic change in the scale of effort *planned* by the U.S. in Vietnam since last winter. If there has been, it is not evident in official statements nor in data on expenditures. Nor, so far as I have been able to ascertain, has information indicating any basic change in plan been communicated by the President and the Defense Department to the other vitally interested Government agencies.

I emphasize *plans* and *outlook* in discussing the Vietnam war and defense spending because these are our principal interest and because it is easy to lose perspective when actual day-to-day events change rapidly and dramatically. Each new troop buildup receives a headline; and each time an unidentifiable Pentagon employee speaks of an increase in U.S. troops in Vietnam to 400,000 by the end of the year, this also is considered news that's fit to print on the front page.

Thus the January 1966 budget—with some modifications and statistical license I shall describe presently—along with official statements issued in support of that budget remains the best source of detailed information on defense spending prospects for the period to mid-1967. And this is likely to remain the case until the fiscal 1968 budget is announced next winter.

ADJUSTING THE BUDGET

To this point most of our discussion of defense spending has been in terms of the national income and product accounts, as this is the basis on which defense spending figures enter the typical general economic forecast. The budget figures are of the same general magnitude and show the same general trend—as can be seen in the charts—but there are differences, particularly in timing.

Defense expenditures on the administrative budget basis were estimated as follows in the January budget. Preliminary actual figures for the completed 1966 fiscal year also are given.

[In millions of dollars]

	1965 actual	1966		1967 estimate
		Estimate	Actual	
Department of Defense, military functions.....	46, 173	52, 925	54, 363	57, 150
Military assistance	1, 229	1, 275	945	1, 150
Atomic energy	2, 625	2, 390	2, 404	2, 300
Total ¹	50, 163	56, 560	57, 700	60, 541

¹ Total includes defense-related activities, which are negative in 1966 and 1967.

Considering the rapidity of the buildup in Vietnam in recent months, actual expenditures in fiscal 1966 came reasonably close to the January budget estimate. Examination of the monthly status of funds reports of the Defense Department for details on spending by broad category through the month of May bear out this observation. Much of the billion-dollar "error" can be ascribed to the expansion of number of men in uniform ahead of schedule. Military personnel had been expected to total 2,987,000 on June 30, 1966, and 3,093,000 on June 30, 1967. Actually, the June 1967 target has already been attained, and presumably some further expansion will occur.

In a harmless display of budgetary plastic surgery, the administration made the total defense spending figure for fiscal 1966 appear smaller than was indicated in the January budget—by removing the \$2.4 billion for atomic energy from the broad defense category where it had been lodged previously. The figures used in this paper include atomic energy, to preserve historical continuity of the data.

I indicated earlier that defense spending on the budget basis seems headed toward a total of about \$66 billion in fiscal 1967. You may sense some inconsistency between this figure and the official budget estimate of only \$60.5 billion, especially in view of the contention that there has been no significant change in basic plan since last winter.

Much of the discrepancy can be explained by a special feature of this year's budget. Secretary McNamara described it in these words in his statement before the House Armed Services Committee on March 8:

* * * we have had to make a somewhat arbitrary assumption regarding the duration of the conflict in southeast Asia. Since we have no way of knowing how long it will actually last, or how it will evolve, we have budgeted for combat operations through the end of June 1967. This means that if it later appears that the conflict will continue beyond that date, or if it should expand beyond the level assumed in our present plans, we will come back to the Congress with an additional fiscal year 1967 request * * *

Because of this arbitrary assumption, the budget itself, and to an even greater extent the appropriation request, imply a tailing off of orders and expenditures for items that would not be delivered or consumed until after the June 30, 1967, cutoff date. Total obligational availability proposed in the budget is actually lower for fiscal 1967 (\$60.4 billion) than for fiscal 1966 (\$64.9 billion). The 1965 figure was \$50.1 billion.

At some point in the next few months, the Defense Department must revise its program to reflect a new assumption regarding the duration of the war in Vietnam. My own expectation, as of now, is that the revised assumption will involve continuance of hostilities within the present broad framework into fiscal 1968, that a 1967 supplemental appropriation of at least \$5 billion will be requested, and that fiscal 1967 budget expenditures will also be increased by slightly more than \$5 billion.

This adjustment reflects primarily the effect of a revised assumption on the duration of the war. It also includes some allowance for the results of the faster-than-scheduled expansion of uniformed personnel, the earlier-than-expected military pay increase, the impact of general price inflation on costs of defense orders, and the unanticipated costs of fighting a war whose dimensions are not entirely within U.S. control.

As indicated in the chart showing quarterly data, defense expenditures on the budget basis tend to fluctuate more widely than on the GNP basis and to move somewhat in advance. This is because the budget figures, as charted here, are not seasonally adjusted and because they include progress payments to contractors. In a time of rising defense expenditures, orders and production are reflected in budget expenditures because of these progress payments before they

show up as purchases of goods and services by the Government. In the GNP accounts, the rise in defense production shows up first as an increase in inventory of goods in process. This process is explained in some detail, with comments on its important economic implications, in articles by Prof. Murray Weidenbaum, of Washington University (St. Louis). The chart shows defense spending on the two bases—budget and GNP—drawing together during 1967 as the rate of deliveries catches up with the placement of procurement orders and current production rates.

THE OUTLOOK FOR PEACE

The analysis presented here assumes continuance of hostilities in Vietnam through the entire calendar year 1967, in much the same general framework as at present, but with U.S. forces applying increasing efforts and spending increasing sums of money. The U.S. objective sounds modest enough. As stated by Secretary McNamara, it is "a stable and independent government free of Communist control." But perhaps the limited nature of the objective makes it all the more difficult to attain.

Because of repeated pressures on both sides in the conflict from most other nations in the world, I would expect some progress to be made during the next 16 months toward bringing the war to an end. But, in view of the pathology of the conflict over many years, it seems unduly optimistic to expect peace negotiations to reach a stage that would permit significant relaxation of the U.S. commitment in Vietnam within the horizon comprehended here.

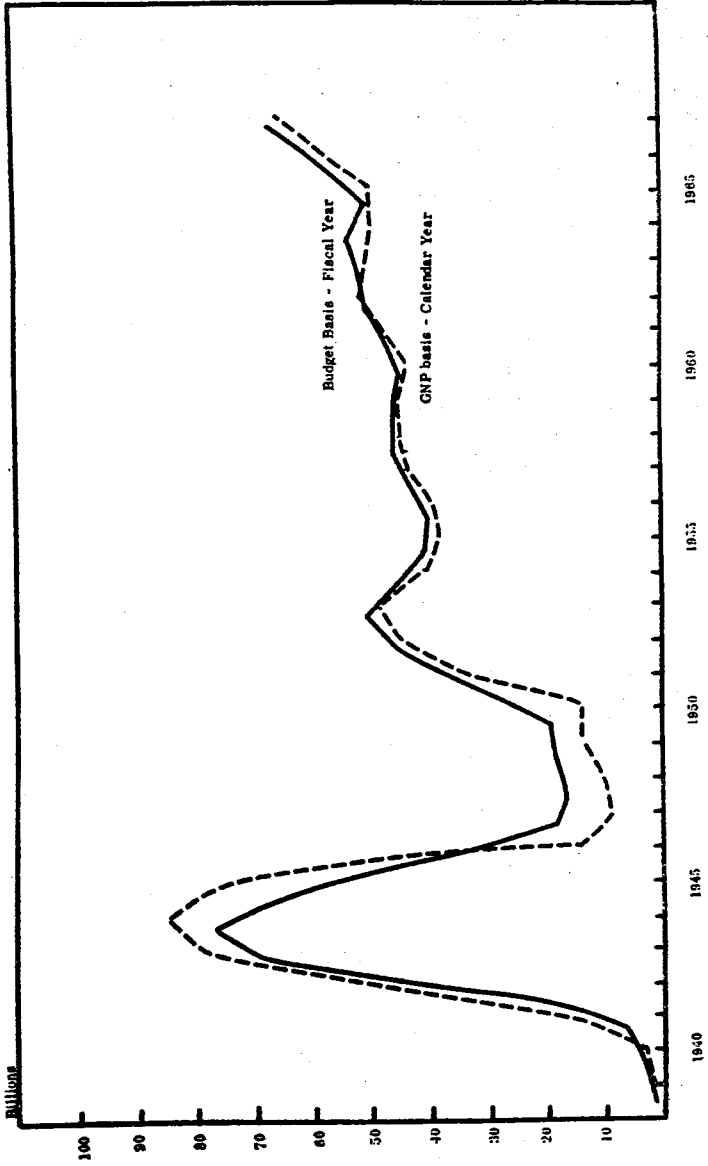
In the other direction—that is, expansion of the area of conflict—developments of the past few weeks offer strong reason to expect that Communist China and the Soviet Union will not change the essential nature of their support of North Vietnam. There has been, in response to U.S. bombing of targets in North Vietnam, an escalation of rhetoric and the boycotting of a track meet which the Russians evidently were going to lose anyway. But there is no evident disposition to convert the conflict in Vietnam into World War III.

CONCLUSION

Thus we are left in this fairly narrow band of uncertainty regarding the prospective course of the war in Vietnam and of defense spending in 1967. It is an outlook that promises continuing strains on the U.S. economy, but only because other pressures on productive resources are present. As the final chart shows, the proportion of GNP going to defense goods and services will remain modest by any recent standard. The prospective magnitude of defense spending should therefore be within the capacity of the economy.

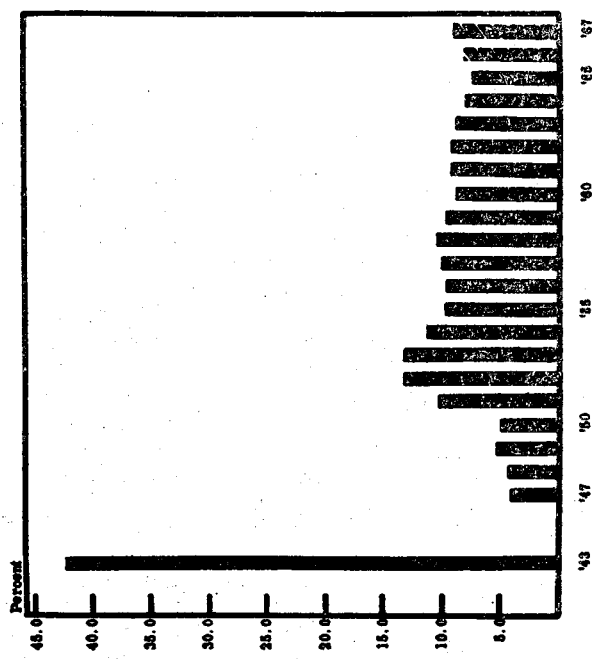
To conclude this analysis in the most practical economic terms, the increase in defense spending now in prospect for next year should not in itself require a tax increase.

Defense Expenditures 1939 to 1967



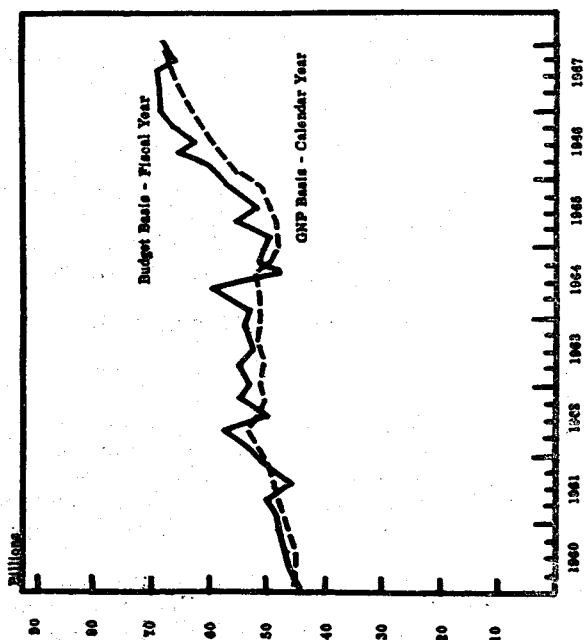
Defense Expenditures

As Percent of GNP



Defense Expenditures

Quarterly Basis 1960 to 1967



NATIONAL DEFENSE AND PROSPERITY*

On July 28, 1965, the President asked the Congress for supplemental funds for defense spending in order to meet the increased requirements of our commitments in southeast Asia. That request opened up a new chapter in the annals of our economy and economic policy; and our history is still being written in that chapter.

The economy moved ahead very rapidly in late 1965 and early 1966, attaining the lowest rates of unemployment and the highest rates of industrial utilization achieved on any sustained basis since the Korean war. The Nation recorded outstanding heights of achievement in output, employment, and real incomes. But we also registered some less welcome new heights in interest rates; and we interrupted a gratifying record of remarkable price stability that had persisted through the first half of the 1960's.

The latest chapter of our economic history is marked by new episodes in the use of economic policy. Our stabilization tools were employed to achieve restraint rather than stimulus of demand. For years, promoting balance in the economy had called for strengthening demand to make it match supply. Suddenly, demand threatened to be too large. Talk and action focused on tax increases rather than tax cuts. Monetary policy occupied the center of the stage more often than ever before.

These developments occurred simultaneously with an important buildup in our defense expenditures and military manpower. None of them was independent of the developments in defense. But the interrelationships are not simple. The connections between the developments in defense and the record of our economy in this Vietnam chapter deserve careful inspection to throw light on our recent progress and problems. Such an understanding is also vital in appraising the challenges that lie ahead—in the short run, sustaining steady growth and stability during the period of active hostilities; and, over the longer term, maintaining high employment in a peacetime environment.

PRIOR TO THE DEFENSE BUILDUP

In considering the economic impact of the recent defense buildup, we might remind ourselves how well we were doing when it first began. As of mid-1965, we had enjoyed an uninterrupted economic advance for 52 months, the longest peacetime expansion in our history. Our real GNP had expanded by about one-fourth in that period, considerably faster than the growth of the economy's supply capabilities. We were able to catch up as well as keep up with our growing capacity.

The unwanted reserves of idle men and machines gradually were brought into productive use. Unemployment, which had amounted to more than 7 percent of the civilian labor force in May 1961, was down to 4½ percent. The average operating rate of our industrial

*Remarks by Arthur P. Okun, Member, Council of Economic Advisers, before the American Ordnance Association, Fort Lesley J. McNair, Washington, D.C., Oct. 12, 1966.

capacity was up to 90 percent after a substantial rise from the recession low of 78 percent in early 1961. The record of price stability was equally impressive: average consumer prices in July 1965 were only 6 percent higher than they had been in early 1961, and prices of non-food commodities had risen only 3 percent. Manufactured finished products at wholesale were selling, on average, less than 1 percent above the level at the start of the expansion.

The progress of the economy from early 1961 to mid-1965 owed much to the active use of expansionary fiscal policy. Through reform of depreciation rules in 1962, the initiation of the investment tax credit also in 1962, and the tax reductions following from the Revenue Act of 1964, earners of both corporate and individual incomes enjoyed a one-fifth reduction in their tax liabilities.

Meanwhile, Federal spending on goods and services stayed on a plateau. After mid 1962, there was little change—actually a modest decline—in the dollar total of defense expenditures. Therefore, as a share of our growing GNP, these outlays fell steadily from 9.5 to 7.3 percent. Defense spending was clearly not the fuel propelling the economy toward full employment. Rather the decline in the defense share was a lubricant that greased the wheels. It made possible reductions in taxes at the same time that important new civilian objectives of the Federal Government were being pursued through the President's Great Society programs.

The private investment share of GNP rose to make up for the decline in defense; meanwhile, State and local outlays continued to absorb a growing fraction of our real output; and, contrary to their usual behavior in a period of rapid economic expansion, consumer purchases held their own as a share of GNP.

Given the healthy economic environment in the spring of 1965, policy was aiming to provide further stimulus to complete the advance to full employment. Congress enacted a major reduction of excise taxes, and the first stage took effect in June 1965. A liberalization of social insurance benefits was enacted to take effect retroactively and was scheduled to give the economy a significant stimulus in the fall of 1965. Monetary policy continued to pursue a quiet life, meeting the credit needs of a brisk expansion and contributing to the stability of long-term interest rates that was so unusual for a period of rapid economic advance.

THE PERIOD OF SPEEDUP

The pace of economic advance quickened markedly in late 1965 and early 1966 with defense and business fixed investment leading the way and consumption close behind. GNP, which had been advancing at an average rate of \$11 billion per quarter, rose an average of \$16 billion per quarter between the second quarter of 1965 and the first quarter of 1966. The annual rate of real growth was a phenomenal 7.2 percent. Unemployment started dropping rapidly and, in February, reached what is still the low point of this expansion—3.7 percent of the labor force. But along with the important progress came some disturbing problems—accelerating prices, soaring interest rates, and a shrinking surplus in international trade.

On top of the deliberate fiscal stimuli that were coming into play and the forward momentum of a strong economy close to full employment, the \$2 billion a quarter rise in defense outlays undoubtedly

played a key role in the acceleration. It contributed to the already great and growing strength of business investment demand by generating needs for new capacity and by lifting economic expectations. Defense was the extra margin, unanticipated and economically unwanted. Yet, over this interval of three quarters, the increase in defense outlays was only \$5½ billion (annual rate) out of the \$48 billion rise in GNP. It was much smaller than the increase of \$9 billion in private business fixed investment. A little extra stimulus went a long way—but it was only a little extra stimulus.

THE WELCOME SLOWDOWN

Since the first quarter of 1966, the pace of advance has clearly moderated. The growth of industrial production and nonfarm payroll employment since March has been about half as large as the spectacular growth of the preceding 6 months. The recent expansion in the economy has proceeded essentially in parallel with the growth of capacity. Thus, the unemployment rate has been on a plateau between 3.7 and 4 percent for 9 months, and average operating rates of manufacturers have also been stable.

Thus, in a relative sense, we have witnessed a "slowdown." More descriptively, we have adjusted to a safe speed from an excessive speed that threatened to generate intolerable price and wage pressures. An economic slowdown can be worrisome or it can be welcome—our recent experience clearly belongs to the second variety. Fiscal and monetary policy since the turn of the year have aimed at bringing about such a slowdown. The recent moderation is a tribute to their effectiveness and a piece of reassuring evidence on our ability to operate flexible policies in a changing economy.

Fiscal policy, after years of expansionist aims, was shifted into reverse with the President's budget in January. Six billion dollars of private purchasing power were siphoned off through higher payroll tax rates legislated last year for medicare and social security liberalization. The President requested and Congress promptly enacted legislation to reverse some of the earlier excise tax reductions and to accelerate payments of both individual and corporate income taxes. At the same time, apart from Vietnam costs, the administrative budget for fiscal year 1967 was held to an increase of 1 percent or \$600 million, as requests for new appropriations for less essential nondefense programs were stringently pared down.

In the first half of 1966, the Federal budget on the national income accounts basis—our best measure of the economic impact of fiscal policy—was operating at a surplus of \$3 billion. In years gone by, we have always carefully made another calculation of where that budget would have been if the Nation had been operating at full employment. This year I need not offer that hypothetical calculation because the economy has come up to its statistical full employment benchmark; thus, the actual and hypothetical surpluses are essentially identical. Within the initiation of medicare benefit payments, the significant surplus will not be repeated in the second half of this year; but present prospects for revenue and expenditures do not suggest that we will be consuming red ink.

Monetary policy has played a particularly important role this year. By pursuing a strategy of active restraint, it deliberately restricted

the growth of credit supplies below the large increases that were being demanded. Declines in residential construction and in commercial building offer eloquent testimony to the potency of tight money in curbing demand.

POLICIES TO IMPROVE THE BALANCE

Thus, although defense spending kept forging ahead, the tools of general economic stabilization were able to achieve a quite satisfactory overall rate of economic advance this spring and summer. But the pattern of this deceleration was not equally satisfactory. It turned out that general monetary tools had, in fact, operated very selectively on the homebuilding industry and had barely touched business investment expenditures, apart from commercial construction. Capital spending demands moved ahead with undiminished vigor and put intensifying pressures on our machinery and equipment industries.

With administration support, Congress enacted financial legislation designed to improve the balance in our capital markets: FNMA's ability to support the home mortgage market was strengthened, and regulatory agencies were given new authority to set ceilings on the interest rates paid on savings by financial institutions. The Federal Reserve used this new authority along with its existing powers in several ways to smooth out the pressures in financial markets.

But fiscal policy was also needed to deal with the remaining imbalances. On September 8, the President announced a cutback and holddown on civilian expenditures. He also proposed to Congress two additional fiscal steps—the temporary suspension of the 7-percent tax credit for equipment and of accelerated tax depreciation on new structures. Once enacted, these measures should help to take some froth off the investment boom and thus to ease the strong pressures on financial markets and skilled labor supplies that the capital boom has generated.

As we look back over the past year, the most notable blemish on our economic record is the 3½-percent rate of price increase that we have experienced at both wholesale and retail. That rate of increase is considerably larger than we can reasonably tolerate over any extended period; in fact, a major goal of public policy for the year ahead must be to work back toward price stability.

It is important, however, to see these price increases in perspective. The fact that much of the rise has taken place in food prices offers no particular comfort to the housewife. But it is significant because, unlike some industrial prices, these prices are flexible in both directions. It is also significant because the spurt in food prices reflects several special and probably temporary circumstances within agriculture as well as the rising demands of a rapidly growing economy. Apart from farm products and foods, wholesale prices are up 2.3 percent in the past year; and the consumer price index, excluding food, shows a rise of 2.9 percent. For nonfood commodities, the increase of consumer prices was 1.8 percent.

Any objective appraisal of consumer welfare must look at both sides of the equation—the incomes people have to spend as well as the prices of the goods they buy. Such an appraisal makes clear that all major groups have recorded substantial gains over the past year. The key to consumer welfare lies in wages and salaries, which represent more than two-thirds of total family income. Total payrolls have risen 10

percent in the past year. The spurt should not be read as a major jump in wage rates. Much of this large gain comes from reduced unemployment, steadier work, job upgrading, and the big jump of employment in high-wage manufacturing industries. But the extra 10 percent is there to be spent by American workers.

Much the same performance has occurred in other forms of income—dividends, interest income, farm income per farm, and corporate profits all show increases ranging from 8 to 11 percent over the past year. The benefits of social security liberalization and medicare to older citizens are partly reflected in the 17-percent increase in Federal transfer payments over the last 12 months. Even after all the proper adjustments to these figures for the 2-percent increase in our population and labor force and the 3½-percent increase in consumer prices, it is terribly hard to turn this record into a sad story.

The price performance of recent months, moreover, has begun to reflect our more moderate pace of economic advance. The index of industrial wholesale prices (1957-59=100) stood at 105.2 in both July and August; it was 105.1 in September. It is rightly said that a large change in 1 month does not make a trend, and it follows that no change for two monthly intervals does not make a plateau. But it is welcome news. Indeed, in September, selected types of machinery and building materials were outstanding as the only manufactured items showing strong upward price movements. International trade data may also be showing some encouraging signs; the balance has not been on a deteriorating trend since April and it may actually be turning around.

DEFENSE AND ECONOMIC POLICY

The brief review of the past year reveals a number of ways in which the defense buildup has complicated the problems of managing economic policy. In particular, the sharp spurt of demand which the defense buildup triggered off late last year and early this year had serious impacts on prices. In the absence of added defense outlays, we would not have sprinted up to and beyond the 4-percent unemployment line. Many of the strains on supplies would not have arisen if we had reached the same levels of utilization on a more gradual upward movement. Supply does not adjust instantaneously; a spurt in demand therefore pushes up prices and order backlogs. Overtime, however, supplies do respond and can catch up with demand even while the demands are still growing. We have seen the responsiveness of supplies in certain basic raw materials and metals. In many types of skilled labor, too, supplies have been expanded through time-consuming recruitment and training programs.

A second complication of the defense buildup arises because my profession's skills and knowledge are imperfect. It is particularly difficult to diagnose the psychological impact of a changing defense outlook on business expectations and decision-making. An imperfect diagnosis of this issue was a key reason why economists—inside and outside of Government—underestimated the strength of demand at the start of this year. As of January, the administration recognized that demand was very strong; but we did not realize just how potent and dynamic it was, especially in the business investment areas.

The defense buildup required important shifts of resources among industries. But this task was handled primarily by our flexible

market economy rather than by Government policy. Priority systems for defense materials were, of course, important. But basically, it was the American enterprise system that met the needs of defense so magnificently. In our economic system, manpower, machines, and materials move where they are needed in response to market incentives. The economy takes major shifts in stride. It absorbed a one-third decline in housing starts in a 5-month period without creating pockets of unemployment. It generated a one-third increase—amounting to \$20 billion—in the capital goods sector in the last 2 years before the strains really began to tell. It should not be surprising that the economy adapted to the defense buildup so well.

The recent experience reflects a number of factors: the strong military position we had when the Vietnam emergency began, our use of economic policy tools, and the great size and productive capacity of our national economy. Unlike World War II or Korea, the Vietnam emergency did not require a major reshaping of America's global military strategy. Ever since the Korean war, we have maintained high levels of defense expenditures, continuously rolling over our stock of defense weapons to take advantage of the latest technology and to maintain an up-to-date arsenal. Instead of spending 5 percent of our GNP on defense as we did in 1949 and 1950, we maintained expenditures of 9 or 10 percent of our GNP on defense from 1954 through 1962. These were investments made in readiness for the contingencies that have since turned so regrettably into reality. As a result, the Vietnam conflict found us well prepared and required a relatively small buildup in total military procurement. At 8 percent of GNP, defense purchases in 1966 constitute a smaller fraction of our national output than in any year between 1954 and 1963.

In World War II, because defense expenditures ran 30 to 40 percent of GNP and absorbed such an overwhelming fraction of certain key industrial outputs, it was judged unfeasible to regulate demand entirely through fiscal and monetary policies. Huge budget deficits were tolerated, and they were financed in ways that added mightily to national liquidity. In light of this policy strategy, it was necessary to contain inflation by direct wage and price controls. In the case of Korea, the onset of the conflict was met by the American public with a wave of war hysteria and an outburst of speculation and hoarding. That initial destabilizing buying spree was the key justification for adopting direct wage and price controls.

The huge defects in both the World War II and Korean systems of direct controls were not basically the result of poor planning or inept administration. They were intrinsic to any set of mandatory regulations that enmesh the market in a web of redtape. Inevitably, such a system will often keep price tags stable only through bare shelves and low quality products. On any reasonable assessment, or even a reasonably pessimistic assessment, of the outlook for the Vietnam conflict, there is no earthly reason why we should want to or need to travel that route again.

NORMAL PROBLEMS OF PROSPERITY

Let me emphasize that I am not claiming that the task of managing economic policy in this Vietnam chapter of our history is, in any sense, easy. What I am saying is that the hard challenges that we face are

essentially those of managing a prosperous economy close to full employment—problems that will be little different when we have the opportunity to make policy for full prosperity in a peacetime environment.

In an underemployed economy, fiscal and monetary policies to expand demand can be recommended with conviction and confidence. On the other side, if there were huge excesses of demand, the case for restrictive policies would be crystal clear. But when the economy is close to a smooth path of balanced growth and when the job is to stay on the path, policy-making becomes a much more complicated and delicate task.

Still it is a path. It is not a tight rope where the tiniest misstep in either direction would result in precipitous recession or disastrous runaway inflation. The economy has shown that it can maintain its balance despite substantial swings in demand above and below the ideal rate of growth. That margin for error is the salvation of a free economy and an imperfect economic policy. If it were a tight rope, we would have broken our necks long ago.

Despite past variations, right now we are close to the growth path that we would consider sustainable. The utilization rates of our labor force and our industrial capacity cannot be described as excessive or inadequate. Policy should aim to maintain a steady growth of output, essentially parallel to the growth of our productive capacity. That would require a growth of real GNP of about 4 percent over the year ahead.

To strive for this objective effectively, we shall have to make careful use of our fiscal and monetary tools—always ready to adapt them to changing circumstances and to restrain or ease in full light of developments in private demand and defense. One clear consequence is that we cannot chart our policies far in advance; we cannot maintain an unyielding position regardless of surprises we may encounter on the way.

The uncertainties in defense are one important reason why it is impossible to blueprint the policies for the year ahead. But they are not the only reason. In any period of high employment prosperity, we should want the best information we can get before making decisions on taxes, expenditure programs, and credit policies.

A number of private observers have complained about the uncertainties of Government policy. They want answers about taxes and the budget and interest rates. So do we. But we want the *right* answers and so should they. It would be reckless and irresponsible for the Government to decide whether we are going to have our foot on the brakes or the gas when we come to the next traffic light until we can see whether that light is red or green. At the moment, there are a number of bends in the road before that traffic light will become visible.

The need for voluntary cooperation from labor and management in their price and wage decisions is also best viewed as part of the normal problems of prosperity. The basic dilemma of reconciling high employment with price stability will persist in peacetime. The most effective and wisest use of monetary and fiscal policies cannot make it vanish. Indeed, the self-discipline of business and labor will determine just how restrictive monetary and fiscal policies have to be to sustain steady noninflationary growth. Enlightened private decisions can help make the path of full employment safe and stable, and can permit a larger total of real incomes to be divided between workers and business owners.

The key current problem for the guideposts stems from the recent increases in food and service prices, which have accounted for the major part of our rise in consumer prices. The Nation is now asking the industrial sector whether owners and workers, in combination, will show the restraint to absorb these costs, as they can do without serious sacrifice. To be sure of success in moving back toward price stability, the Nation cannot afford to have the increases in the prices of food and services built into the structure of industrial costs and prices.

CONCLUSION

It should be clear that the increase in the defense budget of the past year did not make our prosperity. Nor did it break our prosperity. If we must, we can live with and adjust to growing defense requirements. We can even adjust to them without tightening our belts absolutely over time. The growth of our productive capacity makes possible an extra \$30 billion of real GNP (apart from any price changes) in the year ahead. We can clearly pay for defense out of that growth and still have more resources left to meet the urgent needs of the civilian economy.

We can certainly live even more happily without a growing defense budget. Naturally, we would all welcome an honorable peace in southeast Asia for reasons that extend far beyond the economic realm. In addition, there would be important economic benefits to be reaped from the enlarged growth of both private and public civilian spending that would become possible if defense outlays should decline. Both the Congress and the administration would welcome the opportunity to terminate our temporary taxes, to remove some of the restraint from high priority nondefense programs, and to declare new "fiscal dividends" in the form of tax rate reductions.

Wherever the defense budget has to go, it is safe to predict that we will have problems in managing prosperity. But anyone who would label these problems insuperable has simply not read the economic record of recent years.

THE FEDERAL BUDGET AND THE OUTLOOK FOR DEFENSE SPENDING¹

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That perennial whipping boy of economic analysis—the proverbial man in the street—seems to be right once again. Sophisticated economists have been contending that Federal fiscal policy has been one of restraint in recent periods and that the inflationary pressures have arisen in good measure in the private sector, especially from rapid expansion in business capital investment. In contrast, just try asking our wandering pedestrian what is causing the present inflation. The odds are he will reply to the effect that “Don’t you know that there’s a war on, buddy?” This paper says that he is right, and has properly, although intuitively, analyzed the current economic impact of the Federal Budget.

Some perspective may be helpful. In a sense the United States is engaged in a war; but, we do not have a war economy. Ours is truly a mixed economy; we are literally concerned with social security as well as national security. We do not have the controls or runaway inflation often associated with war-time experiences. Yet, we do find an economy pressing very closely to the limits of available capacity and we are making choices somewhat analogous to guns versus butter but not quite so. In a sense, we are choosing both more guns and more butter. However, we are also choosing less private housing and fewer automobiles while we are voting for more urban redevelopment and additional public transportation—thus simultaneously increasing both the military and civilian portions of the public sector in both relative and absolute senses.

Let us first examine the impact of the Vietnam military buildup on the economy as a whole and on the Federal budget; subsequently, I will indicate the effects on various types of companies and regions and then hazard a few projections.

THE TIMING OF THE IMPACT: A MACRO VIEWPOINT

The escalation in the U.S. commitment in Vietnam can, to some extent, be translated into economic impact by looking at the changing pace of military demand. As a benchmark, let us recall that in the fiscal year ending June 30, 1965, total contracts placed, orders let and other “obligations” incurred by the Department of Defense were a shade over \$50 billion. I use the concept of obligations because it is a generic term, including both government payrolls and contracts with private firms. In the January 1966 budget, it was estimated that this rate of making new commitments would rise to well over \$63 billion in fiscal year 1966. Actually, the January budget underestimated the rise in military demand during the fiscal year which was then in progress.

¹ Working Paper 6610, November 1966.

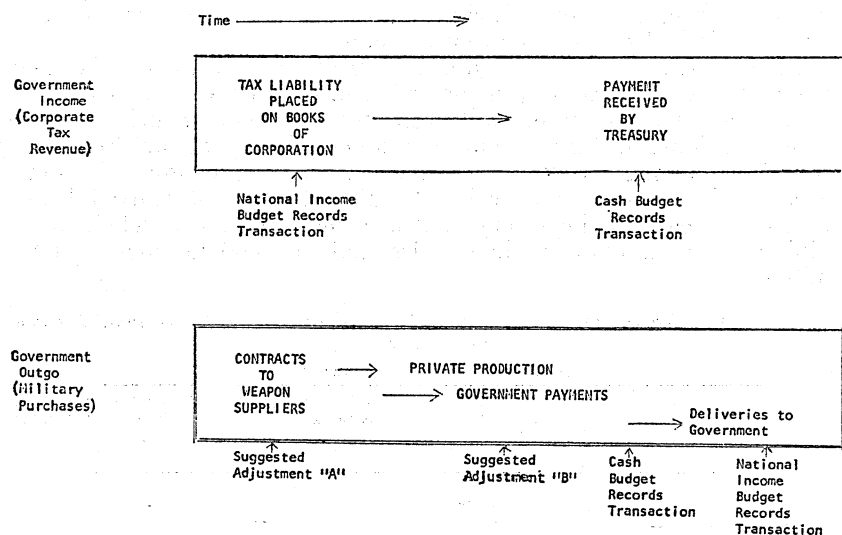
I wish to express my appreciation to Mr. Kenneth Galchus, my research assistant, for both the usual helpful work and for manfully reporting negative findings. I have also benefited from discussions with Harold Barnett, Keith Carlson, William Chartener, and Hy Minsky.

The actual amount of new obligations incurred during the past fiscal year was somewhat in excess of \$67 billion, or fully one-third greater than in 1965. Actual expenditures increased at only half that rate during the same period—16½ percent. In other words, obligations is the sensitive or leading indicator. Unfortunately from the viewpoint of analyzing business conditions, the supposedly most sophisticated measure of government finance, the so-called national income accounts budget, uses a concept that even lags behind expenditures—the delivery of completed military equipment.² To compound the problem, the national income accounts budget picks up government revenues on an accrual basis, which precedes the actual receipt of cash by the Government. (See fig. 1.)

On previous occasions, I have tried to point out that the impact on employment, production, and income of a military buildup may occur primarily at the point in time that budget recommendations are made, increased appropriations are enacted, and orders placed with military contractors. Although this may appear quite obvious to those acquainted with defense industries, the statement of Federal receipts and expenditures on national income account confines the measurement to the actual delivery of completed weapons and other military "hard goods." A considerable period of time often elapses between budget recommendations for military procurement and delivery of the completed items to the government and payment therefore. The primary effect on productive activity, to the extent there is any, normally occurs in advance of the actual government expenditures. Under most circumstances, the placing of orders induces private production on government account and such production remains in the private sector and does not show up as government

FIGURE 1

DIFFERENCES IN RECORDING GOVERNMENT INCOME AND OUTGO



² See my "The Inflationary Impact of the Federal Budget," *Financial Analysts Journal*, July-August 1966, and the sources cited there for detailed analysis of this point. The extent to which deliveries lag expenditures is shown graphically in William H. Chartener, *The Outlook for Defense Spending—How Great an Uncertainty?*, a paper presented before the Annual Meeting of the American Statistical Association, Los Angeles, Calif., Aug. 18, 1966.

expenditures until it is completed and the goods involved delivered to the public sector.

Conceptually, production on government order is not reflected in government purchases of goods and services at the time the work is performed. This activity, as measured by the cost incurred, is currently included, in the gross national product, in the change in business inventories. When the government contractor delivers the finished items, the transaction shows up in the national income accounts as a decline in business inventories.

It is also then recorded as a government purchase of goods and services. These two entries tend to cancel each other out, with no net effect on GNP. At the time it is recorded in the national income accounts, the government purchase does not represent payments to the factors of production; it is more in the nature of an intersectoral transfer—a reimbursement to the government contractor for his outlays during earlier periods.

It is at the order stage that the government action normally will have its initial and often major impact on the markets for labor, raw materials, and financial resources. The contribution to economic activity is made during the production period prior to the actual government "purchase." Indeed, the recording of the government purchase may coincide in time with a reduction in governmental impact on total demand and in repayment of working capital loans by the government contractors.

This may seem like a statistical tempest in a teapot (or a crackpot). However, the upshot is that the official budget and economic reports are very slow to pick up the expansionary impact of the Vietnam buildup, but very quick to take account of the deflationary impact of the revenue speedup. The net result is that the Federal Government appears to have been following a noninflationary economic policy in 1966 when actually it has been a major source of inflationary pressure in the American economy during the past year. I shall try to present some statistical support for that statement.

In table 1, I have assembled a few variations on a theme, the theme being the net Federal surplus or deficit in recent periods. On the far left, I have placed the officially reported surplus or deficit in the so-called national income accounts budget. This, we are repeatedly told from on high, is "our best measure of the economic impact of fiscal policy." On that basis, the Federal budget shifted from a position of ease in the second half of calendar 1965 (a deficit of \$1.4 billion) to some restraint in the first half of 1966 (a surplus of \$3.1 billion).

TABLE 1.—Federal surplus or deficit: Some variations on the National Income Accounts Budget

[Billions of dollars at annual rates]

Calendar year	Federal surplus (+) or deficit (—), official basis	Adjustments for defense obligations		Federal surplus (+) or deficit (—), adjusted basis	
		A	B	A	B
1964:					
1st half.....	-4.3	-0.1	-0.1	-4.4	-4.4
2nd half.....	-1.8	-4.4	-2.2	-6.2	-4.0
1965:					
1st half.....	+4.4	-2.0	-1.0	+2.4	+3.4
2nd half.....	-1.4	-5.2	-2.6	-6.6	-4.0
1966 estimated:					
1st half.....	+3.1	-8.4	-4.2	-5.3	-1.1
2nd half.....	0				

Now I shall try to muddy the waters. The next two columns on that table contain two alternative sets of rough adjustments for the fact that new contracts awarded may be a better proxy for the impact of a military buildup on the economy than delivery of completed weapons. The A series is essentially the excess of military obligations over expenditures during the period, seasonally adjusted and converted to an annual basis. One further change has been made. Over the years, about \$2 to \$3 billion worth of obligations each year do not seem to result in actual expenditures. A number of technical factors are at work here, including some double counting of contracts awarded by one military agency in behalf of another military agency. Such a case might be Air Force procurement of aircraft for the Army, which may show up as an Army obligation to the Air Force, as well as an Air Force obligation to the airplane manufacturer. In computing both the A and B adjustment series, the annual obligation figures were reduced by \$3 billion in each case to take account of the double counting. My intent, of course, is to err on the conservative side.

It can be seen, referring to the A column on the right hand side of table 1, that adjusting for defense obligations results in some significant changes in the "best" measure of Federal fiscal impact. The second half of 1965 is now seen to be a period of much more substantial ease in the Federal budget than shown on the official basis. Of greater interest, of course, is the indication that the first half of 1966 was not a period of fiscal restraint but also one with a substantial excess of outgo over income.

The B adjustment is an attempt to satisfy the more timid. It is a statistical compromise between the two approaches, the result of an arithmetic averaging of military obligations and expenditures for each period. The theoretical rationale that could be offered is that perhaps a more proper counterpart to the liability basis of the corporate revenue computations would be somewhere between the extremes of contract placement and governmental disbursement.

As would be expected, the B results are somewhat more moderate than the A series. The adjusted Federal deficit for the latter part of 1965 is rather large, but, on this basis, the first half of 1966 witnessed a deficit of somewhat reduced proportions. I would suggest that even the B series provides a very weak case for the widely made claim that fiscal restraint occurred during January-June 1966.

ANOTHER KOREA?

It has been fashionable to compare the Vietnam buildup with the Korean experiences in the hope that some parallels would provide a firmer basis for forecasting purposes. However, important differences need to be acknowledged, although they tend to balance each other out.

The first set of differences relates to the smaller relative scale of the present buildup. The current expansion of the armed forces from 2,700,000 to 3,200,000 seems modest indeed when compared to the spurt from 1½ million in 1950 to over 3½ million in 1952. Also, the defense budget doubled during the first year of the Korean war, while, as noted, the increase during the past year was about 16 percent. All this reflects the fact that this is the first time that the United States has entered a major war with a very large existing Defense Establishment.

The second set of differences relates to the fact that, unlike Korea or World War II, the present military buildup was superimposed on an economy which was rapidly approaching full employment. Using June 1950 and July 1965 as the respective beginning points, we find that unemployment was higher in the earlier period (5.4 percent versus 4.5 percent) and the operating rate of industry was lower (80 percent versus 90 percent).

Summing these two conflicting tendencies, we may conclude that even though the current defense program utilizes a smaller fraction of the Nation's resources, it is more in the nature of—but certainly not entirely—displacement of civilian demand rather than resulting in a total addition to actual production of goods and services. Hence, in the absence of direct controls over materials, wages, and prices, it would be expected that inflationary pressures would accompany the rapid shift of resources from civilian to military use.

The Korean experience showed that the strongest inflationary pressures occurred during that first year of the buildup, while the economy was initially adjusting to the new level of military demand. The actual peak in defense spending a few years later occurred shortly before the onset of recession.³ If there is any lesson to be gained from the Korean experience, it is that we particularly need to understand the timing of the impact of the different stages of a defense buildup (and subsequent cutback). Otherwise we can find ourselves fighting yesterday's inflation with a tax increase that will compound tomorrow's recessionary problems.

THE CHANGING MIX: A MICRO VIEWPOINT

Important changes also are taking place within the military budget. Such shifts in its composition are affecting the extent to which different industries and regions are participating in the defense program. The key to understanding these developments is analyzing the changing "product mix" of military spending. The fundamental change is the shift of emphasis away from developing and maintaining in being the potential capability to deal with hypothetical worldwide or general-war situations and toward operating a military establishment actually waging a difficult but limited war whose dimensions keep on evolving. Table 2 shows the extent to which funds for U.S. combat forces have been shifting from general war to limited war programs as the cold war has heated up. It is striking to note that general war forces now receive half of the share of the military budget that they received a few years ago.

However, a more detailed breakdown of the military budget is needed in order to get at the questions of regional and company impacts of this fundamental budget change. Table 3 shows the shifting product mix of military procurement (on an obligations basis). Three major shifts are taking place: (1) a more than doubling in the share of the budget going to tanks, weapons, ammunition and similar conventional battlefield ordnance; (2) a massive reduction in the relative as well as absolute importance of missiles; and (3) the reorientation of the military aircraft budget away from long-range strategic bombers and to tactical aircraft, particularly supersonic fighters and helicopters. The latter point, of course, emerges from

³ M. L. Weidenbaum, "The Economic Impact of the Government Spending Process," *University of Houston Business Review*, Spring 1961, pp. 3-47.

analyzing the details of the budgetary reports. In general, the military budget is looking much more like it did during the Korean war and less than during the more recent period of cold war confrontation with the Russians.

TABLE 2.—*U.S. military budget: General versus limited war*

[Total obligational authority; dollar amounts in billions]

Category of combat forces	Cold war (fiscal year 1962)		Vietnam (fiscal year 1966)	
	Amount	Percent	Amount	Percent
General war capability:				
Strategic offensive forces.....	\$8.9	29.8	\$5.1	13.1
Continental air and missile defense forces.....	2.3	7.7	1.7	4.4
Subtotal.....	11.2	37.5	6.8	17.5
Limited war capability:				
General purpose forces.....	17.5	58.5	30.0	76.9
Airlift and sealift.....	1.2	4.0	2.2	5.6
Subtotal.....	18.7	62.5	32.2	82.5
Total ¹	29.9	100.0	39.0	100.0

¹ The remainder of the military budget is devoted to support of the combat forces, research and development, military assistance, and retired pay.

TABLE 3.—*The changing product mix of military purchasing*

[Dollar amounts in billions]

Procurement category	Korean war (fiscal year 1952)		Cold war (fiscal year 1962)		Vietnam (fiscal year 1966)	
	Amount	Percent	Amount	Percent	Amount	Percent
Sophisticated equipment:						
Aircraft.....	\$13.1	43.5	\$6.4	27.1	\$8.6	29.9
Missiles.....	.4	1.3	4.7	19.9	2.1	7.3
Electronics.....	1.3	4.2	1.5	6.4	1.5	5.2
Research and development.....	1.5	5.0	5.7	24.2	7.2	25.0
Subtotal.....	16.3	54.0	18.3	77.6	19.4	67.4
Conventional equipment:						
Ships.....	1.8	5.8	2.2	9.5	1.1	3.8
Ordnance.....	9.2	30.4	2.3	9.6	6.4	22.2
Other.....	2.9	9.8	.8	3.3	1.9	6.6
Subtotal.....	13.9	46.0	5.3	22.4	9.4	32.6
Total.....	30.2	100.0	23.6	100.0	28.8	100.0

Hence, we are witnessing a reversal of the shift that occurred in defense purchasing in the mid-1950's. Once again, the automotive, mechanical, textile, clothing, and rubber companies are becoming important suppliers of war material. The most dramatic increases have occurred in ammunition (up 270 percent during the past fiscal year), clothing and textiles (up 240 percent), tanks and vehicles (up 80 percent), and food (up 60 percent). The large aerospace and electronics firms, although still significant defense contractors, are finding their shares of the military market to be declining. Unlike the period of large weapon systems—such as ICBM's which could only be supplied by a few of the industrial giants—the demands of Vietnam result in numerous smaller contracts involving a great many and variety of medium-size firms as defense suppliers.

There is also a geographic dimension to this change in the military product mix. Large proportions of the companies working on Vietnam orders are located in the upper Midwest and in other relatively older industrial States in the East. The Far West, which had been receiving so large a share of defense orders during the past decade, is experiencing some absolute as well as relative declines. Table 4 shows the highlights of these changes.

Several States have been receiving defense contracts at rates of 40 to 50 percent above last year's levels. These include Connecticut, Illinois, Indiana, Maryland, Michigan, Minnesota, Ohio, Pennsylvania, and Texas. In contrast, Washington State, Utah, and Colorado have seen their defense contracts virtually cut in half during the past 2 years. California is now at the 1963 level, despite the substantial growth in the overall military market which has occurred since then.

TABLE 4.—*The changing geographic distribution of defense contracts*

[Percentage distribution of dollar volume]

Census region	Korean war (fiscal year 1952)	Cold war (fiscal year 1962)	Vietnam (fiscal year 1966)
Northeast:			
New England.....	8.1	10.9	11.9
Middle Atlantic.....	25.1	18.7	17.6
Subtotal.....	33.2	29.6	29.5
Midwest:			
East North Central.....	27.4	12.6	15.3
West North Central.....	6.8	6.7	7.6
Subtotal.....	34.2	19.3	22.9
South:			
South Atlantic.....	7.6	10.4	12.5
South Central.....	6.4	7.8	12.2
Subtotal.....	14.0	18.2	24.7
Far West:			
Mountain.....	.7	4.7	2.5
Pacific.....	17.9	28.2	20.4
Subtotal.....	18.6	32.9	22.9
Total.....	100.0	100.0	100.0

The economic impacts of this shift in the location of defense industry may not be as simple as would appear. The Midwestern States have large, well-diversified industrial bases and these recent increases in their defense orders, although dramatic, may be taken in stride as they will require relatively small proportions of existing manufacturing capacity. On the other hand, defense work in recent years has accounted for a proportionately large share of the total manufacturing employment of many Western States and in several cases for virtually all the growth of such employment in the major metropolitan areas. The adjustment to the changing military market may be especially difficult for those Western States that are not participating in the simultaneous expansion in the commercial aircraft market.

On balance, I would expect that the reorientation of defense spending toward greater emphasis on limited war equipment, which seems likely to outlast the current Vietnam buildup, will have important differential effects on the relative rates of growth in population, income,

and tax bases in the various regions of the country—effects which should primarily be favorable to the Middle Atlantic, Great Lakes, and New England areas.

THE OUTLOOK FOR 1967: WILL FISCAL RESTRAINT BE BIGGER ON THE INSIDE THAN ON THE OUTSIDE?

And now to my cloudy crystal ball. Ordinarily, the Federal Government would have issued by now a Midyear Review of the Budget, updating the estimates published last January. Very impressive reasons are given for the lack of a Midyear Review. As I recall, a different set of excuses were made last year. As a sometime forecaster, I will readily agree that it is always more comfortable not to have to stick your neck out.

Hence, the task at hand for us is to infer future developments from the most recent data. It is almost a situation of constructing a case based solely on circumstantial evidence. Let us begin by analyzing the pattern of military buying during the past year, the fiscal year ending June 30, 1966—which is the latest period for which data are publicly available. Because of the unique seasonal pattern of military ordering and the absence of a seasonal adjustment for earlier periods, it is useful to compare the data for a given quarter with the corresponding period in previous years. Beginning with the July–September quarter of 1965, we find that military obligations during each of the past four quarters were the highest for that respective period since the peak demands of the Korean war in 1952.

In addition, each recent quarter has been higher than the preceding quarter, with the greatest spurt occurring during April–June 1966. Because of the age-old tendency to concentrate Federal commitments in the final quarter of the fiscal year (so-called June buying), not too much can be read into the last quarter of data. However, it does seem quite clear that the upsurge of defense orders is not running out of steam.

The leadtime between ordering tanks, ammunition, and similar conventional limited war equipment is likely to be less than is the case for ICBM's, space systems, and other highly sophisticated aerospace products. Hence, the acceleration in defense buying in fiscal 1966 already has been translated into a \$4 billion annual rate of increase in defense purchases of goods and services in the July–September quarter and likely into another \$3–\$4 billion increase in the current October–December quarter. These estimates account for the first half of fiscal 1967.

Here, this swami's crystal ball begins to cloud up and you need to put some coin in his palm in order to obtain a forecast for the calendar year 1967. Hopefully, the fine print on that coin should contain the military obligation rate for the past quarter and estimates for the next quarter or so. There is little advantage to going back to the January budget; as we later learned, only some time after the document was released, it was based on the optimistic assumption that the war soon would be over. We are really on our own. Two alternative projections of defense spending in 1967 seem to be fashionable these days. The first, a Newtonian or Dow theory approach, says that the current increase in defense outlays will continue through 1967—the rationale being that if the war continues then the military buildup will need to continue.

The second or acceleration principle approach indicates that defense spending should taper off in the last half of 1967, even if the Vietnam fighting continues at its present pace, but, of course, barring another large-scale escalation. The idea here is that you can let up on the gas pedal after the vehicle attains the desired speed—in the present case, the new production lines should already have been put in place and quantity production rates achieved early in 1967. Also, to the extent that some of the recent ordering has been designed to restock military inventories, new ordering can taper off as appropriate stock levels, particularly soft goods, are reached. Because this second approach is somewhat more sophisticated, I tend to lean toward it, but with limited confidence. The assumption of no further military escalation may be too optimistic.

One view that I do hold with greater firmness may be consistent with both of these alternatives and that is that the major shock to the American economy from the Vietnam buildup already has occurred. This statement is made despite the likelihood of Federal defense purchases reaching a total of \$70 billion in 1967, a rise of 40 percent from 1965. Barring a fundamental escalation, it is unlikely that the coming year will witness the 33½ percent increase in defense orders that occurred last year. Hence, the inflationary pressures of a demand-pull nature which we have been experiencing during the past year are likely to subside somewhat, but the cost-push inflationary pressures are likely to continue.

TABLE 5.—*Federal receipts and expenditures in the National Income Accounts*
[In billions of dollars]

Calendar year	Receipts	Expenditures	Surplus (+) or deficit (—)
1958.....	78.7	88.9	-10.2
1959.....	89.7	91.0	-1.2
1960.....	96.5	93.0	+3.5
1961.....	98.3	102.1	-3.8
1962.....	106.4	110.3	-3.8
1963.....	114.5	113.9	+7
1964.....	115.1	118.1	-3.0
1965.....	124.9	123.4	+1.6
1966 estimate.....	143.0	140.0	+3.0
1967 estimate.....	158.0	158.0	-----

NOTE.—See table 1 for possible adjustments to the expenditure and surplus/deficit figures.

To mollify those who anticipate a projection of the Federal budget, table 5 is offered, probably as a sacrifice on the altar of convention. No doubt it should be kept out of the reach of children and appropriately labeled as to its possibly being injurious to the health, financial in this case. It can be seen that I am projecting a relatively small surplus in the statement of Federal receipts and expenditures in the income accounts in calendar year 1966 and approximate balance in 1967—on the official basis. I have used poetic license in labeling these guesses as "estimates."

A few comments on the details of the projections may be in order. On the revenue side, I have attempted to take account of the scheduled continuation of the speedup in the payment of the corporate income tax. For example, in the current year, large corporations are paying about 116 percent of their normal annual liability (42 percent of their 1965 liability and 74 percent of their 1966 liability). In 1967, the speedup continues, with these companies paying approximately 126 percent of normal annual liability (the remaining 26 percent of their 1966 liability plus 100 percent of their 1967 liability). Thus, they will be on a pay-as-you-go basis for the calendar year 1968 as a whole.⁴

On the expenditure side, the bulk of the recently enacted increases in the various Great Society programs is reflected primarily in rising transfer payments and grants-in-aid to state and local governments. Relatively small proportions of these education, housing, and anti-poverty programs result in Federal purchases of goods and services. The greater part of these purchases and virtually all of the recent increases are in connection with military and related national security programs.

On the face of it, it would appear that the trend is for a slight reduction in Federal fiscal restraint in 1967. As you must know by now, I do not believe that it will work quite that way. If we had the data to project the adjustment for defense obligations, I believe that the results would be a Federal deficit on income and product account in 1966 and a smaller deficit in 1967, thus indicating an abatement in the inflationary pressures directly resulting from the Vietnam buildup.

DEALING WITH INFLATION

Some important policy implications flow from all this. A general tax increase taking effect some time in 1967 may be too late to deal effectively with the inflationary pressures of the Vietnam buildup and of limited usefulness in dampening a wage-price or cost-push inflation. It might also coincide with some of the belated impacts of this year's tight monetary policy, especially in its effect on business investment.⁵ Thus, a tax increase now might relieve guilt feelings for not having enacted one in January, but mere confession of error might be more helpful.

Given the continued speedup of Federal revenue collections, assuming that our diagnosis of the economic impact of defense spending is approximately correct, and given the softness or slowing down in many private areas of demand, 1967 may be the year that—one way or another—they lower the boom.

⁴ Hence, *ceteris paribus*, a reduction in Federal corporate income tax receipts may occur in 1968.

⁵ Cf. John Kareken and Robert M. Solow, "Lags in Monetary Policy: A Summary," in Warren L. Smith and Ronald L. Teigen, editors, *Readings in Money, National Income and Stabilization Policy*, 1965, pp. 76-80.

1966—YEAR OF EXCESSIVE DEMANDS AND THEIR CONTROL*

Nineteen sixty-six was the sixth consecutive year of expansion in spending and production. In each year since 1960 total demand for goods and services has risen rapidly enough to reduce the proportion of workers unemployed and the proportion of plant capacity unused. The year 1966 differed from the previous five, however, in several significant respects.

Aggregate demand for goods and services was excessive during most of the year. In the 1961-64 period demand rose sufficiently to bring the economy steadily closer to its potential output and, on the whole, in a moderate and orderly fashion, avoiding the creation of undue problems of resource allocation and inflationary pressures. During 1965 there was a much more rapid growth of total demand, accompanying the acceleration of activity in Vietnam, but most of the rise was matched by an increase in output. During most of 1966 the rise in demand continued to be rapid and significantly outpaced the ability of the economy to produce.

The year 1966 was one of inflation. During the first 4 years of the business expansion, sales and production rose in parallel fashion, and overall prices changed little on balance. Beginning about mid-1965 total demand rose more vigorously than real output, and rises in price indexes became notable. In 1966 demand continued to rise rapidly, and, with the economy at virtual capacity, about half of the rise was translated into higher prices.

Federal budget policy was more stimulative to total demand in the last half of 1965 and in 1966 than it had been in over a decade. From a relatively restrictive stance in 1960 budget policy became progressively more expansionary through tax cuts, additional welfare programs, and acceleration of the war in Vietnam. Such developments are believed to have been major forces in the growth of total demand from an inadequate level in the early 1960's to the excessive level of 1966.

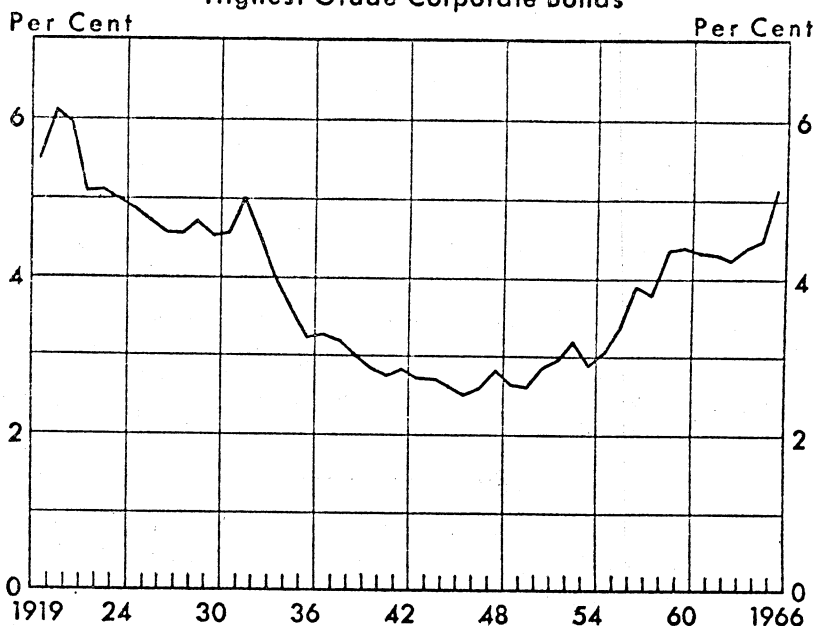
Monetary trends changed markedly during the year. In mid-1960, several months before the cyclical upturn, the money stock began rising moderately, at about a 3-percent annual rate compared with an average 2-percent rate in the previous decade, and continued to rise at this pace until mid-1964. From the summer of 1964 to the spring of 1965 money rose at an expansionary 4-percent rate, and from the spring of 1965 to the spring of 1966 it went up at a very stimulative 6-percent rate. This marked expansion was probably a significant factor in the strong rise in total demand during 1965 and 1966. From April through November money declined on balance, acting as a restraining force on total demand in the last half of 1966.

Interest rates rose rapidly from mid-1965 to the spring of 1966 and then spurted yet more rapidly until September, reaching the highest levels in over thirty years. Higher yields were reflected in a decline of bond prices and exerted a depressing influence on the value of common stocks, real estate, and other capital assets. The rise in

*Reprinted from Federal Reserve Bank of St. Louis Review, December 1966.

rates resulted primarily from a huge demand for funds accompanying Federal budget policy and the strong demand for goods and services. Since yields on market securities rose much more than interest rates offered by banks and savings and loan associations, a greater share of the public's funds than in many years flowed directly from savers to investors without passing through an intermediary.

Interest Rates Highest Grade Corporate Bonds



Source: Moody's Investors Service
Latest data plotted: 1966 estimated

The nation's balance of payments with other countries deteriorated in some major respects but improved in others. On the one hand, the strong domestic demands for goods and services, the higher prices in this country, and the shortage of some items domestically caused a jump in our imports and a marked reduction in our trade surplus. On the other hand, the higher interest rates in this country were helpful in reducing the net outflow of capital and money market funds from the United States. For a fuller analysis and some background on the balance-of-payments problems, see "1966 Balance of Payments in Perspective," on page 17 of this Review.

In late 1966 there were indications that the increase in total demand was moderating. Spending was less buoyant, credit demands were less vigorous, and interest rates receded from the peaks reached in the early fall. The abrupt shift in the thrust of monetary variables, which turned from expansion to restraint in the spring of 1966, may have been a major restraining force on total demand later in the year.

Total demand serves as a convenient theme for analyzing economic conditions. All of the above developments, together with many

others, were related to the excessive total demands for goods and services during 1966. This article examines: (1) public policy factors affecting the demands; (2) the resulting demands for goods and services and the accompanying rises in production, employment, and prices; (3) credit and interest rate developments; and (4) some economic trends, prospects, and choices developing in late 1966.

PUBLIC POLICY FACTORS AFFECTING TOTAL DEMAND

The two chief factors influencing the course of spending are fiscal and monetary developments. Some analysts see fiscal policy as dominant, while other view monetary policy as more effective. Direct Government spending and taxing are commonly thought to play more important roles in determining total demand than their size might indicate for two reasons: (1) Government spending and taxing are based largely on political, military, and welfare considerations and are not directly a function of current or expected income; and (2) a one dollar change in Government spending or taxing will generally lead to more than a one dollar change in total spending because of the effects on disposable incomes of consumers and businesses, which, in turn, influence their spending.

Monetary actions may have as great or greater impact on economic activity. Changes in the stock of money held by individuals and businesses relative to their desire to hold it as an asset influence spending. Linkages between money and spending may be through such variables as interest rates, credit availability, and liquidity.

FISCAL DEVELOPMENTS

Since mid-1965 the U.S. Government, through its current taxing and spending programs, has exercised a strongly stimulative influence on total demand for goods and services. The overall relation between tax rates and the provision for expenditures has been the most stimulative in over a decade. At the same time, total tax receipts of the Government have been rising rapidly, largely because of the growth in private incomes. As a result, the total impact of the Federal budget, including the effect of the so-called automatic stabilizers, has been less stimulative than current programs alone would indicate.

Recent Federal Government fiscal developments may be examined in the light of alternative ways of measuring receipts and expenditures of the Federal Government.¹ There are four budgets of the Government in common usage. The administrative budget is the basic planning document of the Government. The cash budget measures the cash flow between the Government and the rest of the economy. The national income accounts budget summarizes the receipts and expenditures of the Federal Government sector as an integrated part of the recorded activities (i.e., the national income accounts) of all sectors of the economy. The high-employment budget is an estimate of the national income accounts budget which would prevail at a specified rate of resource use.

¹ For a fuller discussion of various budget measures, see Keith M. Carlson, "Budget Policy in a High-Employment Economy," in the April 1966 issue of this *Review*.