

REVIEW OF THE SPACE PROGRAM

MONDAY, JANUARY 25, 1960

HOUSE OF REPRESENTATIVES,
COMMITTEE ON SCIENCE AND ASTRONAUTICS,
Washington, D.C.

The committee met at 10 a.m., Hon. Overton Brooks, chairman, presiding.

The CHAIRMAN. The committee will come to order.

Members of the committee, we are privileged to have before us today the Secretary of Defense, Hon. Thomas S. Gates, Jr., who has a prepared statement.

In addition to the Secretary today, we have Dr. Herbert F. York, Director of Defense Research and Engineering, and also we have Brig. Gen. George S. Brown, Military Assistant to the Secretary of Defense.

Mr. Secretary, do you have any others whose names you would like to have in the record at this point as backing up your testimony, and supporting your position?

Secretary GATES. No, sir.

The CHAIRMAN. We are pleased to have you with us, Mr. Secretary.

In the press there have been so many statements of so many characters, and so many statements at variance with other statements and at variance with testimony that this committee has received over a long period of time, that we are especially anxious for you this morning, if you will, to straighten things out. We are glad you have a written statement. After you read it, we would like to ask you some questions. I know you are a very busy man so the committee has adopted a 5-minute rule for questioning, each member being allowed 5 minutes for questioning. In that way, we can get the important questions to you, we can stick to the subject and at the same time, release you at the earliest possible moment.

With that prelude, sir, we are very happy to have you and if you will proceed with your statement, we will appreciate it very much.

STATEMENT OF HON. THOMAS S. GATES, JR., SECRETARY OF DEFENSE; ACCOMPANIED BY DR. HERBERT F. YORK, DIRECTOR OF DEFENSE RESEARCH AND ENGINEERING; AND BRIG. GEN. GEORGE S. BROWN, MILITARY ASSISTANT TO THE SECRETARY OF DEFENSE

Secretary GATES. Thank you, Mr. Chairman.

Mr. Chairman and members of the committee, I am glad to have this opportunity to discuss the missile and space programs of the Department of Defense and their relation to national security.

Our ballistic missile and space programs are only about 10 years old. In that short span of time we have achieved impressive results.

In the years between 1945 and 1953, following the end of World War II, we were interested in the possibilities of developing rockets into weapons systems of longer range. Our experts examined the problem thoroughly and came to the conclusion that with the relatively low yield atomic weapons then available ICBM's could not compete with other approaches such as aircraft and air-breathing missiles.

Following the invention of the thermonuclear weapon, our experts restudied the problem and concluded that with a thermonuclear warhead, the ICBM could become a competitive strategic weapon. These first thermonuclear weapons were, however, very heavy.

In the face of this difficulty, there were two directions in which to go. We could go ahead and start the development work on a massive rocket, or we could direct our energies toward a reduction of the size and weight of the warhead and thus the entire weapon. We chose the latter. We also carried on extensive work on missiles of the air-breathing type and developed several excellent weapons systems as a result.

In 1953, our nuclear scientists made a genuine breakthrough. They told us they could make nuclear warheads a great deal smaller and lighter than earlier warheads. Our long-range ballistic missile program really started at that point. It has progressed since then with astonishing speed.

We have been successful in developing the Atlas, the first of our ICBM systems, from design to maturity in a far shorter period than was originally estimated. In 1954 the Von Neumann Committee, composed of some of our top scientific experts, estimated that with unlimited funds and top priorities, we could have ICBM's in 1962 or 1963. Actually, the Atlas was turned over to the operational forces of the Air Force nearly 3 years ahead of that schedule.

The Polaris system was first conceived about 3½ years ago, and the target date was optimistically set for 1963. We now fully expect to have this system operational in 1960—a full 3 years ahead of prediction.

There are other examples. We have made rapid progress in developing the IRBM. We are moving ahead with the second-generation ICBM, the Minuteman. Each year since 1953 we have spent increasing amounts on our ballistic missile programs and we have the weapons to show for these expenditures. Today, our ballistic missiles are reliable, accurate, and effective.

Our present ICBM and IRBM boosters are adequate for our immediate needs for military satellites. We anticipate a continual growth with our improved upper stage boosters for space vehicles, which will provide considerably more weight-carrying ability in a year or two.

The development of the very large thrust boosters has been assigned by the President to NASA. In accord with this decision, there is pending before Congress a proposal to transfer the Saturn project—the large clustered space booster—and the Development Operations Division of the Army Ballistic Missile Agency to the National Aeronautics and Space Administration.

This does not mean that the Department of Defense has no interest in large boosters. We are very much aware of the importance to the welfare of the United States of a vigorous program in space flight and exploration, and of the need for bigger boosters for the space exploration program. In view of the potential military need for much larger boosters than are now available, we strongly endorse a vigorous NASA program. We have, of course, made available military personnel to assist him, whenever requested by Dr. Glennan.

We intend to follow NASA progress in large boosters closely just as we follow other NASA projects—Tiros (meteorological satellite) and Mercury (man-in-space), for example—that have potential military applications. Let me assure you that we have very close working relationships with NASA and we are going to keep them that way.

There are now several DOD-NASA working groups which provide, on a day-to-day basis, essential liaison and cross-fertilization of requirements and technical knowledge on projects of mutual interest. The National Missile Ranges and tracking stations of both NASA and DOD have been used heavily in support of space launchings for both agencies. In order to make the most effective use of these facilities, a comprehensive study in the area of integrated range support for missiles and space vehicles currently is underway.

To assure effective DOD support for the NASA Mercury project, Maj. Gen. Donald N. Yates has been named as DOD coordinator for Project Mercury support. In this task, he reports to me through the Joint Chiefs of Staff. General Yates is also continuing his assignment as Commander of the Atlantic Missile Range located at Cape Canaveral, Fla.

Earlier in my statement when I described our rapid and solid accomplishments in the ballistic missile field, I did not desire to leave the impression that these represent the Department of Defense's only effort in the support of our space program. Ballistic missiles are by no means the only systems now under development. Earth satellites will provide us with new means of extending our present military capabilities. Perhaps the most important are the reconnaissance and early warning satellites which will contribute significantly to our deterrent posture. If warning of enemy missile launchings exceeds the reaction time of our own retaliatory forces, the enemy would be strongly deterred from launching an attack.

We are pushing other programs that have direct military applications. These are communications and navigation satellites. In each of these areas, we have important research and developments projects well underway. All show promise. Some have progressed to the point where they are now in the stage of applied development where we can test their feasibility on a systems basis.

The present satellites show promise in initial tests. They must undergo feasibility demonstrations on a systems basis, before we start line production. Let me assure you that when one of our projects proves itself in such fashion, we will make sure there are funds available to support production.

We have steadily increased expenditures and efforts for defense space related programs. The funding for separately identified space-related programs in fiscal year 1959 was \$381 million, for fiscal year 1960 the funding is \$414 million, and for fiscal year 1961, \$481 million.

These figures do not include funds for ballistic missiles or for programs transferred to NASA.

Remember these are test programs and there will be some failures. The reason why we test is to learn through experience where the bugs are, what has to be fixed or changed and how we should redirect our research efforts.

During the last 6 months we have made improvements in the organizational structure and assignment of space responsibilities within the Department of Defense. I am confident these improvements will accelerate our program by eliminating overlap and duplication.

On September 23, 1959, a plan for the progressive and orderly transfer of space projects from ARPA to the military departments was initiated. This plan assigns to the Air Force responsibility for the development, production, and launching of military space boosters; and for the separate assignment to the military departments on the basis of primary interest or special competence, of the development responsibilities for payloads and specialized ground support equipment for space and satellite systems.

Specific assignments for development of payloads have been made on Midas (early warning satellite), Samos (reconnaissance satellite) and Discoverer (engineering research satellite) to the Air Force. Transfer of the Transit (navigation satellite) and Notus (communication satellite) projects to designated military departments is anticipated sometime during the current fiscal year.

Another important organizational improvement has been the strengthening of the position of Director of Defense Research and Engineering. We have recently placed the Advanced Research Projects Agency directly under his supervision. ARPA continues to be responsible for certain basic research programs. In particular that in the field of solid propellant chemistry will contribute to our future rocket development programs for use in missiles and space flight.

I have spent considerable time in describing the progress of our military missile and satellite programs because I feel that many have failed to distinguish between military and nonmilitary achievements in space. Our satellite program has progressed. We have placed a number of satellites in orbit. I am confident we have gained much technical and scientific information which will enable us to demonstrate further progress in the next year.

The present day space programs of both NASA and the Department of Defense are, of course, largely outgrowths of missile programs. The technology, facilities, and components developed in the past for ballistic missiles are now used today for space projects. Similarly, today's missile development effort will no doubt find future application in both civil and military space activities. In this connection, the total direct obligations planned for research, development, test, and evaluation of missiles in fiscal year 1961 will be approximately \$2.4 billion. This figure includes separately identified funds in the procurement budget for development, test, and evaluation of large missiles. Of course, our total missile program including procurement is much larger.

This summary of the space efforts of the Department of Defense offers no grounds for complacency or self-satisfaction. Nevertheless, we have made great strides in missile and satellite development. In

the area of the Department of Defense's responsibility space activities having direct military application—we have sound programs. We are moving swiftly toward their accomplishment.

Mr. Chairman, I appreciate the opportunity you and your committee have given to me to develop these thoughts. Dr. York is here with me to assist in answering any questions you might have.

The CHAIRMAN. Thank you very much, Mr. Secretary, for a very informative statement that you have made. I have listened to every word very carefully.

I must confess that I am one of those persons you refer to on page 7 of your statement, one who has failed to distinguish between military and nonmilitary achievements in space. It seems to me that any achievement in space is going to more or less have military significance. It is hard for me to distinguish between the two. Do you share that view?

Secretary GATES. We have an interest in doing in space what we can do better there than we can do elsewhere, so that we are very acutely aware of what goes on in the space effort, in the field of space exploration and scientific progress. We are very interested in maintaining a strong big-booster program for this purpose.

However, there are no firm military requirements from the Joint Chiefs of Staff for the use of space, other than the projects which I mentioned upon which we are working. The future will unfold, I am sure, more interest and probably will be related to man in space in some way over the longer future.

The CHAIRMAN. How are you going to have some of these programs which you refer to—for instance, the Mercury program, the Tiros program, the reconnaissance program and the Saturn project and many other programs, perhaps, that you haven't referred to, without the big booster?

Secretary GATES. The point of the big booster, Mr. Chairman, is to put increased weight in space, what we call payload. This is what the Russians have the capability of doing. We have no military requirement for our missile programs that requires that kind of booster, so that we have enough booster capacity, today, to handle our intercontinental missile programs and the satellite programs that we have specific military requirements for.

The CHAIRMAN. Well now, the other day I think you testified before the Senate and referred to the fact that our capabilities should be based, as I read it, on the intention of your possible adversary.

Secretary GATES. No, I didn't testify that way, Mr. Chairman.

The CHAIRMAN. I am not trying to quote you, but what is your position on that this morning?

Secretary GATES. Do you mean you want my comments on this discussion that is going on about intelligence, Mr. Chairman? This gets into the subject of intelligence.

The CHAIRMAN. Perhaps I misread your statement, but as I read it, I had understood that it was related to the intentions of your possible adversaries as to our defense system.

Secretary GATES. There are some who are interpreting it that way, Mr. Chairman.

The CHAIRMAN. How really should it be interpreted?

Secretary GATES. Well, the intelligence under discussion estimates missile capacity and missile production and the dates on which numbers of intercontinental missiles may become operational.

The intelligence information has improved so that it is now possible to have it more refined and better evaluated on what the Russian intercontinental missile programs may be. Originally it was only possible to estimate missile capability. There is now better information available from a variety of sources on a variety of subjects that are considered in reaching an intelligence estimate. There is obviously no intelligence whatsoever, on U.S.S.R. intentions as to specific military or political policies or actions. Of course, it is impossible to have such intelligence. What we have is a refined and better set of facts pertaining to the probable, or what the Soviet ICBM program may be.

The CHAIRMAN. So you are not relying on their intentions at all, now, are you?

Secretary GATES. We have never been relying on their intentions, as to what they would do with regard to specific actions.

The CHAIRMAN. I will ask you one more question and I will stop because we are going to invoke the 5-minute rule this morning.

We have had witness after witness, Mr. Secretary, come before us last year and this year, too, referring to a missile gap of several years between the time that we will catch up with the Russian development in the big booster and the ICBM.

Now, what do you have to say about that this morning? Do you agree that there is a missile gap and for a period we will be in a difficult spot defensively?

Secretary GATES. I testified extensively, Mr. Chairman, in closed session on this. It gets a little difficult to go into detail in an open session. But again, we are mixing up the question of big booster capability for space exploration, where it is admitted we are behind the Russians with the relative positions we hold with them in connection with the development of intercontinental missiles.

Now, I testified that I believe our retaliatory capability is on a sound basis.

The CHAIRMAN. You don't testify about the missile gap?

Secretary GATES. We have been talking about whether there is a deterrent gap rather than missile gap. Missiles are only one way of doing this terrible business. We have a number of ways.

The CHAIRMAN. Of course, we have the manned aircraft there, but I am talking about the missile gap. Is there such a thing as that in your mind?

Secretary GATES. I have tried to look at the total retaliatory capability of the United States. Assuming a surprise attack on the United States, what will its survivability be to act as a valid deterrent, so that no one would ever dare start the kind of war that we are talking about. And on that basis, I believe that we are in a strong position.

The CHAIRMAN. Mr. Fulton.

Mr. FULTON. Mr. Secretary, we are glad to have you here. We in Pennsylvania are particularly proud of you because you are a Pennsylvanian. I might say it is a small world because I remember serving with you as a fellow lieutenant on a U.S. Navy carrier out in the

South Pacific in World War II. I might not have argued so much with Lt. Thomas Gates if I had known he was going to be the future Secretary of Defense.

We do have your statement here and I think it is an excellent one. As a matter of fact, you have made some definite comments which I think should be called directly to the attention of the committee and the public.

On page 3:

Today our ballistic missiles are reliable, accurate, and effective.

I would thoroughly second that and I would compliment you particularly on the Atlas and the fact that we have that operational at the present time and have had it for some months, when Russia is just now coming to the point where, on its specific tests, with no landfall, they are supposed to have come within a certain degree of accuracy which could be anybody's guess, at sea.

Secondly, on the Polaris system. I want to again compliment you, because that will outmode between 450 and 500 of the current type submarines that the Russians have, and when it becomes operational it makes a tremendous submarine gap because there is no possibility of Russia, with its current submarine fleet, meeting that opposition from the Polaris missile.

I note, too, on page 3 you state:

Our ICBM and IRBM boosters are adequate for our immediate needs for military satellites.

You are thoroughly convinced, as I am, that that is true?

Secretary GATES. Yes, sir.

Mr. FULTON. I want to compliment you, too, upon your effective distinction on intelligence between what we had to go on previously regarding estimates of missile capacity and production of our possible opponents, and what we now have—the ability to determine when the missiles are becoming operational. So that we have two factors that we can look at from an intelligence point of view, and, therefore, have a broader base upon which to make the estimate of our own posture. Is that not right?

Secretary GATES. Yes, Mr. Fulton, with recognition of the fact that intelligence is not an exact science.

Mr. FULTON. I agree on that, too. But we do have the broader base of intelligence upon which to make estimates of the capabilities and the operational capabilities of an ICBM nature of our possible opponents, is that not right? They are broader at the present time?

Secretary GATES. Yes. They have been more refined and are broader, that is correct.

Mr. FULTON. And might I say this: If we took a static position completely in the United States and simply tried to project the present generation of missiles ahead, you reach a much different result than if you look at the fact that some of our opponents might be changing, might be emphasizing other particular types of missiles or space vehicles. If we take that into consideration, on a dynamic basis, we will be preparing in a way that will not let that become a reality. Is that not right?

Secretary GATES. That is absolutely right. It is a matter of judgment how much is put into the missiles that are not as good as those to follow which we are pushing with highest priority.

Mr. FULTON. We are not trying to produce in great number these first-generation missiles on a department store basis, but rather are putting high priority on the ones we can see will be most effective based on the new and current intelligence.

Secretary GATES. The ones we conceive to be most effective based on military requirements.

Mr. FULTON. And you are finding that you are able to cooperate—I will ask Dr. York this, too—you are able to cooperate with NASA and the various agencies of NASA, completely. You are having no troubles of liaison, or finding any opposition or obstruction between your two departments and agencies?

Secretary GATES. I will testify first we are having no trouble whatsoever in working very closely.

Dr. York, I think, will say approximately the same thing.

Mr. FULTON. Is that right, Dr. York?

Dr. YORK. Yes.

Mr. FULTON. So there is complete harmony now as between the civilian and the Department of Defense on these projects, both of ballistic type as well as space vehicles. Is that right, Dr. York?

Dr. YORK. Yes.

Mr. FULTON. I have one-half minute yet and I have one more question:

At the present time when vehicles and various rockets can be used for a dual purpose, there doesn't seem to be much valid reason for trying to make a distinction between the military and the civilian field. Therefore, the question comes, on those areas where there is no clear division, which the chairman had referred to, is there adequate and proper cooperation, and is there good development teamwork, so that we in the United States are getting the proper results and the right kind of investigation to give us good research and development?

Secretary GATES. We have been able to divide these on a realistic basis between the two agencies responsible. If gray areas develop in the future when our requirements change, I am sure we will be able to do the same thing.

Mr. FULTON. Dr. York, you agree on that, too, do you?

Dr. YORK. Yes; we have made agency-to-agency agreements wherever there have been gray areas where that has been needed.

Mr. FULTON. There has been no particular large dispute as to jurisdiction that has held back any of these programs?

Secretary GATES. That is correct.

Mr. FULTON. Is that right, Dr. York?

Dr. YORK. That is correct.

Mr. FULTON. That is all, thank you.

The CHAIRMAN. Mr. Teague.

Mr. TEAGUE. Mr. Chairman, first I would like to ask if we will have a chance to hear the Secretary in executive session or not?

The CHAIRMAN. Well, let us see how we get along this morning, Mr. Teague, and then we can see what the requirements are, and what the Secretary can do. After we go a round on the open questions, we can make a decision on that.

Mr. TEAGUE. One question in open session: Recently Dr. Pickering came near to saying there was no sense of urgency in the White House or in the top echelon of Government.

My question is, is there a sense of urgency in your office and in the White House and if there is, what would indicate that, what evidence would tell us there is a sense of urgency?

Secretary GATES. Well, we have a great sense of urgency within the Department of Defense, as witnessed by the fact that we have expanded the ICBM program repeatedly, again expanded it in presentations before Congress for the fiscal year 1961. We have a sense of urgency about the space satellites that we are working on now in the Department of Defense.

Certainly the missile programs have the highest national priority as far as contractors and contractual arrangements are concerned and I would say that there is a military sense of urgency of great importance.

Mr. ANFUSO. Will you yield to me a minute?

Mr. TEAGUE. I yield.

Mr. ANFUSO. Mr. Secretary, what confuses me on this sense of urgency and also your statement that you find no military requirement for a larger booster, have you taken into consideration that with a larger booster you can get a greater range, a greater distance, and also put up a bigger payload?

Secretary GATES. Certainly, sir. We have adequate range in our present programs and we have big payloads and we have bigger payloads in the process of development.

Mr. ANFUSO. Well supposing, Mr. Secretary, there were to be a war—and God forbid that that should happen—the Russians at the present time have their bases, their launching bases, a good 7,000 miles away, or maybe more. The Atlas will never reach that.

Secretary GATES. The Atlas has been fired 6,300 in terms of statute miles.

Mr. ANFUSO. I read that, but, of course, it is not official as to when that will become operational and when you can classify that as being absolutely a correct feat.

Secretary GATES. This gets to be a definition of operational, sir. The Atlas is already operational at Vandenberg Air Force Base and it has already flown a distance that is satisfactory for its mission.

Mr. ANFUSO. Do you think the Atlas will ever reach a range of 8,500 miles?

Secretary GATES. I think it is highly conceivable that it will—yes, I think it will.

Mr. ANFUSO. Militarily?

Secretary GATES. But there gets to be a question of how far you must fly, sir, in relation to your objectives. There is no need to do that. But it could do it if necessary.

Mr. ANFUSO. What I am getting at is the launching bases which the Russians have. These can be put in North Manchuria, North Siberia, a distance of almost 8,000 miles, and I don't think we have anything now that meets it.

Secretary GATES. If they should happen to pursue the program that you are talking about, it would not require that much range.

Mr. ANFUSO. How about from Alaska—of course, I think there are shorter ranges. I can see that.

Secretary GATES. Yes, sir.

Mr. TEAGUE. Would you comment on your statement that this summary of the services of the Department of Defense offers no grounds for complacency or self-satisfaction?

Secretary GATES. Yes, sir. I think the worst thing we can do is to be complacent and I think the technical changes are coming so rapidly that the Department of Defense's total program must be on a continuous review basis. If we see an opportunity to make greater progress with a given system, we ought to be able to consider it and go ahead and do it, after it is properly evaluated.

I have a very strong worry about some of the implications that have been put on my testimony about being complacent. We are not taking the talk that we hear about peace and so forth at all seriously in developing the defense program. We believe that until the Soviet Union demonstrates by actions something in the way of progress toward disarmament, or something toward a better way of living together, and earn a Good Conduct Medal, that we should not take them seriously in the Department of Defense.

The CHAIRMAN. At this moment, gentlemen of the committee, the press has asked me if it is possible—it is so crowded that some of the members of the press have no place to sit. If it is possible for us to move in a little closer where we can. I know Mr. McCormack is in Boston and I know Mr. Martin is not here.

We could thus give the members of the press a place to sit.

If there is no objection, I will ask the clerk to change the nameplates.

Mr. Chenoweth?

Mr. CHENOWETH. Mr. Secretary, we are dealing, I think, with probably the most pressing question before the American people today. We are reading in almost every paper, every day, charges that we are unprepared from the missile standpoint and Russia has completely outdistanced us in the missile front and almost every other front. If that barrage continues, there will probably be some serious concern in this country as to just what our defenses actually are.

What is your position, Mr. Secretary? Do you feel any alarm or concern over these circumstances after knowing what the Russians are doing and what we have?

Just what would you tell the American people? What do you want us to tell the American people insofar as our defense picture is concerned today?

Secretary GATES. I think we have a strong deterrent posture and an ability to retaliate effectively against any attack on the United States. We are by no means a second-class military power. We are in a strong position.

Mr. CHENOWETH. You have heard nothing so far as the reports on Russia are concerned, which would indicate that we have anything to be seriously concerned about, insofar as immediate attack is concerned? We will be ready to take care of any military emergency which may arise. Is that your position?

Secretary GATES. I believe we are in that position; yes, sir. And I want to reemphasize as I just stated to Mr. Teague, that I don't believe in being complacent about it. And I also believe in continuously reviewing it.

We have the Joint Chiefs of Staff and the military advice that we get. And this is our mission. This is why we exist in the Depart-

ment of Defense and if we were in any other position or were going to permit the United States to get in any other position, we have no business having the responsibilities we have.

Mr. CHENOWETH. Mr. Secretary, I have great confidence not only in you personally, but in the military leadership of this country and I have every reason to believe that what you are telling us is absolutely the truth. I hope we can get that message to the American people.

Now, the Atlas has been operational for several years, you mentioned?

Secretary GATES. No, sir. No, sir. It only became operational in September.

Mr. CHENOWETH. What is the picture on the Titan?

Secretary GATES. The Titan is not operational. The Titan is still under test. I think there have been six tests. Four were successful and two recent ones have been failures.

We believe we have identified the cause of the failure in the Titan and will go ahead with it on a program that will not slip too much from its original operational dates.

Mr. CHENOWETH. The Atlas is operational and we can expect the Titan to be operational in the near future?

Secretary GATES. Titan is coming along. It has growing pains, as some of these very complicated systems have.

It used to take us 10 years, you know, sir, to develop a fighter airplane. This was considered about normal. We have compressed a tremendous amount of technical change into a relatively short time, already. It is not unusual for us to have setbacks in test programs when we are trying to go ahead so rapidly. It is not at all unusual. We are working on the Titan program with, again, the highest priority. It has growth potentials over and above what the Atlas missile has and we have the confidence that we will solve our difficulties.

Mr. CHENOWETH. Would you want to make any comparison between our missile strength, today, or setup, with the Russians' or would you rather do that in executive session?

Secretary GATES. I would rather not do that, sir.

Mr. CHENOWETH. Mr. Secretary, as Secretary of Defense, you can assure this committee that the defenses of this Nation are ready for any emergency then that may occur?

Secretary GATES. I can, indeed.

Mr. CHENOWETH. I have every reason to believe that that is the case, Mr. Secretary. I certainly don't subscribe to these charges that we are a second-rate nation. I think we are still the No. 1 top Nation in the world. I recognize the heavy responsibility you have to see that we maintain that position and I have every reason to believe that you and those around you are going to do it.

Thank you, Mr. Chairman.

The CHAIRMAN. Mr. Anfuso.

Mr. ANFUSO. Mr. Secretary, I believe that you are going to become a great Secretary of Defense, but I most respectfully disagree with you in the line which you are following, which is the line of this administration—such as the President who said he knows more than any living general about what to do about this situation.

I disagree with you and the administration as to what we ought to tell the American people. I think that we have failed to tell the

American people the true facts. I think that we have failed to tell them that we are behind in the space race and we have failed to tell them why we are behind.

The result is, Mr. Secretary, as I find it in talking to constituents, that the people are not ready to back us here in Congress and the administration in an all-out effort to beat the Russians. I think that the American people today are much too complacent. They are absolutely divided on this question and they are divided because we have two schools of thought in Washington, one which says, "Let us tell them the whole truth," and another which says, "No; let's keep telling them we are strong, we are first, and no other country can ever beat us."

I think it is wrong. I think we ought to tell the American people that we are not as strong as some people here in Washington would have us believe and that we ought to appropriate more money in order to catch up with the Russians.

Don't you agree that that is a better way of meeting the situation?

Secretary GATES. I think it is very important that the American people understand the difference between the space effort of the Russians and the military programs of the two countries.

I have said in my statements which have been released that we are behind the Russians in the big booster program which gives them a capability of going to the moon and putting heavy payloads in space exploration. This has been admitted and it is true.

I have also said we are not behind the Russians in our military effort overall, in our military posture. We have deployed forces all over the world, we have a great deal of capability with these forces. It is one thing to admit that you are behind in the ability to put big payloads in space for which we have at the moment, no military requirement, and another thing to admit that we are behind in our total military posture.

I think the distinction should be made between these two efforts.

Mr. ANFUSO. Mr. Secretary, what I would like to get at is a total effort on the part of the American people to back the Congress and back any administration in being ahead of the Russians.

Secretary GATES. We all would like to do that.

Mr. ANFUSO. Is it not a fact, Mr. Secretary, that at some time in the last year or the year before, the Joint Chiefs of Staff said in a report made to the Secretary of Defense and to the President of the United States, that in order to get a lead over the Russians, they would require a budget of from \$55 to \$60 billion, and all that we have been able to appropriate for each one of these years is approximately forty-one point x billion dollars. Is that correct?

Secretary GATES. I don't believe they ever wrote a report to that effect, but if you took the unilateral military requirements of the services historically, you would find that they added up to a higher figure than any budget under any administration ever granted. This is traditionally and historically so.

However, the Joint Chiefs of Staff have assured me that they believe the total budget as presented in fiscal year 1961, is one that they can support.

Now, if each one of them had their own way, they would divide the money differently. They would like to do different things with

it. Therefore, we reviewed the budget on a program by program basis and went to the scientists, where scientific vision was needed, we went to the military and tried our best to itemize the programs and determine in the best national interests which one we should pursue.

But it is historically true that the Chiefs of Staff, in looking at it from a service point of view, have military requirements that add up to a great deal more money than they have ever gotten in any program that is totally reviewed.

Mr. ANFUSO. But it still may have been insufficient.

General Taylor made that statement. It is no secret. He made that statement in his book, that there was an agreement by the Joint Chiefs of Staff when they went to the administration they would cut down.

He also said that military and civilian scientists and technicians have come up with fantastic new weapons and equipment, but just lack the money to buy them. He also made that statement.

Now, is it true that our own scientists, our own technicians have come up with new inventions, new things that could make a better-equipped Army, a better equipped Navy, and they have lacked the money to put these things into operation?

Secretary GATES. It is a question of deciding between good ideas, and everyone has an idea that maybe the idea that he is working on is better than some other ones. What we try to do is give it judgment and review, from a military, technical and scientific approach. And sometimes we don't pick everybody's good ideas.

Mr. ANFUSO. Mr. Secretary, I am going to insist and I am going to be one to continuously state now and in the future that we are not doing enough. The administration has conceded a 3 to 1 missile lead to the Russians and in 3 years time the Russians are going to have 1,000 ICBM's operational that can hit a target 8,500 miles or more. We are going to be in a pretty precarious position at that time, in 3 years time. And we are in a precarious position right now and are not going to be in a better position 3 years from now unless we double our efforts.

What I am telling you as a Member of Congress is just what Mr. Teague turned around to me and said, "Ask the Secretary what can we do as Members of Congress to help the administration? What can we do except to appropriate money? We want to do something, because we realize that we are not doing enough."

The CHAIRMAN. Mr. Van Pelt.

Mr. VAN PELT. No questions, Mr. Chairman.

The CHAIRMAN. Mr. Sisk.

Mr. SISK. As I understand you are interested in larger boosters and in the space program as it has been carried forward by NASA.

To what extent, Mr. Secretary, is research going forward with reference to the possible need of military application in space? I realize we talk about peaceful exploration of outer space and I hope it remains that way and I hope we can bring about some international agreement which would preclude it ever being used for the military. But I am curious to know to what extent you and Dr. York and others are concerned with this particular problem?

Secretary GATES. We are very concerned with having an adequate research effort behind our military requirements. I believe we have that. It has been very helpful, I might say, to have the new office

which Dr. York leads, created under the Reorganization Act of 1958, because this has set up an authoritative office with ability to supervise the research programs of the services.

Therefore, I believe we have the research behind the immediate satellite programs which are important to us for military purposes. And we certainly have an enormous effort behind the intercontinental missile and the Minuteman, the Polaris and our weapons systems.

Now, maybe Dr. York would want to augment this answer to you, sir.

Mr. SISK. If I have interpreted what you have said, not only here this morning, but in the past, you feel that generally, so far as our strict military program is concerned, that we are in fairly good shape with the present boosters.

Now, of course, the point of my question goes to what extent you are concerned, for example, with the Saturn program and these other programs.

Secretary GATES. We are interested that it have a good healthy effort behind it because we don't know when we will get a military requirement that will require it. So we are very interested in having it supported and having it come into being.

The President has already made a statement concerning this program and his interest in it.

Mr. SISK. With reference to our present deterrent strength, which basically, I think, rests on SAC—or has, and probably will in the future for some time—dealing now with research and development, which is the jurisdiction of this committee, what is your present position on the B-70 program?

Secretary GATES. The present position on the B-70 program is that it is going ahead in a research program, backed by, I think the figure is approximately \$75 million in fiscal year 1961 and it will require more, I believe, to accomplish it, to fly two prototype airplanes.

Mr. SISK. To what extent have recent decisions, Mr. Secretary, slowed down the B-70 program? This is not meant to be critical, but there has been a lot of stuff printed and I don't know how correct some of it is. I know in the Air Force—and I realize that they are concerned and are rather zealously guarding their prerogatives and concern about this B-70 program—I am interested in knowing to what extent you feel recent decisions may have slowed down the development of this program.

That is, how many more years will it be now before we would actually have the B-70, this bomber with the potential which was anticipated back—I remember 2 years ago when we were first given a review of this program?

Secretary GATES. Yes, sir. I can't give you an accurate answer. I will give you the thinking.

The Air Force program envisaged the expenditure of approximately \$5.5 billion and operational aircraft in 1965. This was a weapons system and it was a brand new step forward, a quantum job for the state of the art of manned aircraft. It involved mach 3 speed, new components, new metals and so forth.

There are many people who have doubts that this Air Force program might not be somewhat optimistic both in terms of cost and in

terms of time period. In other words, it might come into being later than 1965. It might be 1967 or 1968.

At this particular time we believe that we will have in being four strategic missiles systems. If you count the Polaris as an ICBM when you put it on a submarine, which I think you should, you would have Atlas, Titan, Minuteman and Polaris. So the B-70 comes in competition with the ICBM's to do a single purpose mission.

Now, specifically answering your question if the Air Force estimates were correct, we have slowed down the development of a weapons system by not going ahead with the full development of a weapons system, as opposed to going ahead with prototype airplanes. We have probably slowed it down by the months that we are dealing with the prototypes as opposed to dealing with a weapons system.

Actually whether we really slowed it down, assuming a year from now we decide to go ahead or not, is almost impossible to predict.

Mr. SISK. I realize it comes to a matter of judgment, Mr. Secretary, on the need. I personally would not think that cost, itself, would be too much of an item.

I realize that this \$5.5 billion which was, I believe, the figure used back when we were first briefed on this program, is a lot of money. But I am hopeful that your decision has not been based strictly on the dollars and cents, but has been based on the fact that you think maybe you have some other program that is going to be better.

Secretary GATES. That is right, it is for the time being. We will have these four systems and in addition, we are developing what is known as the Hound Dog missile for the B-52 and another missile above that is in research which is a ballistic missile, being an improved version, you might say, of the Hound Dog.

And we have the B-58 which is an advanced airplane over the B-47 and it also has certain growth capabilities in it. So it is a decision based on what the total effort should be in terms of retaliatory and strategic weapons.

Now, we have not made a clear decision. We have postponed the decision, you might say, by, instead of completely canceling it or completely going ahead with it, we have said, "We will build two airplanes and take a look at how these other programs come ahead, their schedules and their operational dates."

These systems are all related to each other. You cannot look at any one in isolation.

Mr. SISK. In conclusion, Mr. Chairman, I simply want to say I appreciate the statements of the Secretary. The thing that sometimes we get a little concerned with down here is the postponement, Mr. Secretary, of these decisions and the delays that are caused in an apparent desire to make the right decision. I realize it takes time to make it, but I hope we don't miss the boat by being too slow.

Thank you, Mr. Chairman.

The CHAIRMAN. Mr. Riehlman.

Mr. RIEHLMAN. Mr. Chairman, I want to commend the witness for a very fine statement here this morning and one which I believe is factual and presents not alone to this committee, but to the American people our military posture as far as the missile program is concerned, and what we intend to do in that field.

Following a little bit what Mr. Sisk has had to say here, and I know it is uppermost in the minds of all the American people, we have heard it said by some of our leading people in the Nation that consistently our President and the Secretary of Defense and those in charge of our military posture are putting a balanced budget before our national defense and security.

With your experience and your understanding of this situation, I would like to have you tell this committee your own honest opinion as to whether or not there is any basis for such a statement to be made.

Secretary GATES. I would not hesitate, Mr. Riehlman, as I stated in my testimony before, I believe, every other committee, that if we got a little bit firmer basis to proceed—for example, on the Polaris weapons system—to go ahead at a more rapid rate, no matter what it cost, I would recommend to the President that we accelerate a program, when we get a little surer of our ground.

We have been going ahead, to give that illustration, on three submarines a year, and the missiles that are related to them. This looks like a sort of static program controlled by money. But it has little to do with money. Actually it is a \$3½ billion investment in a system and we haven't fired a missile from a submerged submarine yet. This is something we know we are going to be able to do. We believe it will be successful. And when we find this system is on firm ground, it seems to me then three a year is wrong. Then we must decide the force levels required to do the job this way and go ahead and augment it.

Now, we are interested, as I think all Americans are, in a sound economy as a strong matter of principle. But Mr. McElroy, who had the responsibility for this budget and I who shared it with him, had no guidance on what the defense budget should be from the President of the United States or from anyone else. We set up our own guidelines and tried to devise the proper program.

Mr. RIEHLMAN. And you had no direction from the President or the Bureau of the Budget at any time to cut down on any program that you felt was essential to the defense of our Nation? For the purpose of balancing the budget?

Secretary GATES. No, sir. We have had advice from the Bureau of the Budget as to what their opinions are about programs, but for the purpose you state, we had nothing of that kind.

Mr. RIEHLMAN. Now, to get back to one of your statements in respect to the new payload that is under development right now for use in our defense arsenal: Will the present Atlas missile that we have be able to carry this additional payload or will we have to change the booster of the engines in the Atlas missile?

Secretary GATES. Perhaps Dr. York could answer that better than I could.

My understanding is that the growth potential in payload, readiness, and general overall capabilities is greater in the Titan than it is in the Atlas.

Dr. YORK. Did you want something further, Mr. Riehlman?

Mr. RIEHLMAN. I was particularly interested in whether or not the present Atlas would carry the additional destructive power—I might put it that way—that you are planning in the new hydrogen bomb that is under construction.

Dr. YORK. I am afraid I don't know what bomb you are referring to.

Mr. RIEHLMAN. Perhaps I haven't made myself entirely clear, but during the discussion the Secretary said that we have at the present time under construction, a missile with a greater bang—that is what I understood it to be—or payload, that is what I want to say, not a bigger bang—and I am wondering whether this present Atlas missile that we have can carry that load.

Dr. YORK. The present Atlas missile or the Titan missile can carry the military payloads that we now have in mind.

Mr. RIEHLMAN. And that we have under construction?

Dr. YORK. Yes.

Mr. RIEHLMAN. Mr. Secretary, one other question: I would like to have a bit of information for the committee as to exactly what progress we are making. It is mentioned in your statement with respect to the Minuteman.

Secretary GATES. Yes. The Minuteman is on its schedule in a research category. In addition to that, we have taken another forward step in the 1961 program by approving a production facility in advance of having the missile, you might say, in form to produce. We recommend that we go ahead and develop a production facility that will produce 30 Minutemen per month. We are pushing the Minuteman as we are the Polaris, with very high priority—the highest priority.

And so far we have confidence it will meet its schedules.

Mr. RIEHLMAN. Would you rather give this information in executive session, as to the timetable that you have for the Minuteman?

Secretary GATES. Yes, we would rather give it in executive session.

The CHAIRMAN. Mr. Karth.

Mr. FULTON. Do you have any time left?

The CHAIRMAN. The gentleman's time has expired quite a while ago.

Mr. KARTH. Without violating any security information, how many ICBM's do the Russians have at this time?

Secretary GATES. I can't discuss numbers of missiles that are included in intelligence estimates. I am sorry.

Mr. KARTH. It has been generally conceded apparently by people from your Department or those in the military or in relatively high echelons, that they have a so-called 3-to-1 lead. I suppose it is a matter of simple arithmetic, if we know how many we have. There has been open discussion on that.

Mr. FULTON. I raise a point or order, because any discussion of this pro or con would give valid information and I don't think we should discuss the amounts.

Mr. KARTH. I am not going to discuss the amounts, Jim. I just say the American people, I think, are pretty familiar with what this figure is.

Mr. FULTON. You came up with something that required a denial and I don't even want that.

The CHAIRMAN. The witness is capable, I think, of taking care of himself. He can decline on the grounds of security to answer any questions.

Mr. KARTH. And I certainly hope that he does, Mr. Chairman.

Mr. Secretary, I am leading to this question: I suppose that the military and your Department has answered this question on many occasions—and again I don't know if this is security or not, but I would like to have your viewpoints on it if possible: How many well-placed ICBM's—knowing the C.E.P. capability of the Russian missile—approximately how many ICBM's does your Department feel it would take, from a manufacturing, industrial, and transportation standpoint, to incapacitate the United States?

Secretary GATES. This is impossible to answer because it depends on the accuracy of a missile, which is an estimate. It depends on the time of warning, which is an estimate, that we get. It depends on a great many factors that produce a very difficult and complicated set of formulas. We war-game these formulas continuously under all kinds of circumstances. You get one answer one way and you get another answer the other way. You add 24 hours warning as opposed to 15 minutes, and you get a whole different set of answers. If you change the accuracy, you get a whole different set of answers.

So you have to look at every conceivable possibility. This is done continuously in the Department of Defense.

Mr. KARTH. You wouldn't care to make an estimate on overall—

Secretary GATES. Because of the questions that go into the formula, you can't make an estimate. It depends on what we are talking about. And also what strength we have in being at the time.

Mr. KARTH. Let me ask you this question then, Mr. Secretary: What is your posture insofar as it relates to detection and destroying incoming ICBM's?

Secretary GATES. There is no antimissile weapons system in being. We are doing a great deal—spending a great deal of money and effort on a full-scale testing of the Nike-Zeus system, which will lead not only to a decision on whether we ever put the Nike-Zeus into production or it will give us additional information on the anti-missile-missile problem. We are putting into being what is known as the ballistic missile early warning system, called the BMEWS System, and we have under research some other ideas on how to improve warning.

Mr. KARTH. Most or all of these things are in the state of research and development, rather than any operational posture?

Secretary GATES. The BMEWS is beyond that. It is through with research and development and it is being constructed.

Mr. KARTH. What capability does the BMEWS have if you care to discuss it in open session?

Secretary GATES. I prefer not to discuss it, sir, if that is all right.

Mr. ANFUSO. Will you yield?

Mr. KARTH. Yes; I yield.

Mr. ANFUSO. Mr. Secretary, would you concede that this country is at least three times as rich as Russia?

Secretary GATES. I don't know. I am not enough of an economist to know the exact ratios. I will concede we are richer.

Mr. ANFUSO. It has been reported we are at least three times as rich as Russia. Yet Russia has spent three times more than we have in this space effort. And the reason for that is that we have paid more attention to the principle of private comfort and private consumption and placed those things ahead of our national need.

Secretary GATES. I don't know that the Russians have spent three times as much. I have no knowledge of that.

Mr. ANFUSO. I think we ought to get those figures.

Secretary GATES. I wouldn't know how to get them, sir.

The CHAIRMAN. Mr. Hechler.

Mr. HECHLER. Mr. Secretary, have you consulted with Allen Dulles on this rather abrupt shift in the method of intelligence appraisal?

Secretary GATES. It is not an abrupt shift, but I have, of course, consulted with Mr. Dulles.

Mr. HECHLER. Were you at all deterred by his reactions to this?

Secretary GATES. No. We are trying to give the same facts. We belong to the same organization.

Mr. HECHLER. What I was getting at is, does this represent a new development in administration policy in the appraisal of intelligence?

Secretary GATES. No. It represents an improvement in intelligence. A refinement of former intelligence that hopefully gives us better intelligence.

Mr. HECHLER. This is with the full knowledge and consent of the President then, I assume, that this means of appraising intelligence has been initiated by you?

Secretary GATES. I haven't discussed the matter with the President. The President is, of course, aware of the national intelligence estimate which is the basis upon which we testify.

Mr. HECHLER. I share the feeling of concern of Mr. Teague, Mr. Anfuso and other members of the committee, that we don't have enough sense of urgency in this program.

I wonder if you have considered that your statements on intelligence have contributed toward lulling the American people into complacency?

Secretary GATES. I have no desire to lull people into complacency whatsoever. I have tried to say in every statement that this is one thing we should not be. We should not take the so-called spirit of Camp David seriously in the Department of Defense. We should go ahead with a proper military program. I have said that in every statement in every committee I have been before.

Mr. HECHLER. Mr. Secretary, how important is the Nation's educational system in relation to our progress in the space program?

Secretary GATES. I think Dr. York could better answer that than I.

The question is how important is the Nation's educational system in our program?

Mr. HECHLER. I would prefer to have your answer, since I believe this is so important to the security of the Nation in the future. I would like to hear your personal answer as the Secretary of Defense.

Secretary GATES. I would only answer as a lay person in this regard. I would answer that it is very important. That it is extremely important to have coming on people technically trained and qualified in a world that is getting so vastly complicated, and where the technology is changing so rapidly, more rapidly than ever in our history. So I would say it was vital.

Mr. HECHLER. If you feel education is vital, have you communicated this thought to the President?

Secretary GATES. Yes, we have—when I was in the Navy, we instituted in the Department of Defense a great many programs for education of enlisted men, the advanced education of officers—

Mr. HECHLER. I am referring mainly to the general educational system in the country insofar as it contributes toward the production of the kind of people who can help us move forward in research and development.

Secretary GATES. Well, the President is well aware of the importance of this and is vitally and personally interested in getting qualified people in the Department of Defense.

I am sure that this is something where his answer would be the same as mine.

Mr. HECHLER. Have you ever consulted with Vice Admiral Rickover about his ideas on education?

Secretary GATES. I have never spent a great deal of time with Admiral Rickover on his ideas of education. I have heard them. I have read some of his speeches. My contacts with Admiral Rickover were on the business of building nuclear submarines, not on the business of education, upon which he is a great expert.

Mr. HECHLER. He believes, however, that the future defense and progress of this country depend upon our educational system and its ability to produce people who can help us move forward in this whole space program and in the development of new weapons that will assist us in gaining a stronger defense.

Secretary GATES. I know what Admiral Rickover believes. I have heard him. I heard him for a part of the time last night on television.

Mr. HECHLER. That is all.

The CHAIRMAN. Mr. Daddario.

Mr. DADDARIO. Mr. Secretary, your position is that today we stand with such strength that no one would dare wage a war against us?

Secretary GATES. That is correct.

Mr. DADDARIO. It then puts us in a position that, assuming also what you say is correct about the Russian ability, that there is a sort of a balance of terror which exists. Our ability to destroy them as well as theirs to destroy us and I wonder how long will this go on? Is this going to be the situation for the next 10 years? Will we be able, say, projecting ourselves 10 years from now, be able to still say that we will have put ourselves in such a position that the Russians will not then, 10 or 20 years from now, be willing to take a chance in casting such a blow against us?

Secretary GATES. This will go on until controlled and proper measures toward disarmament take effect. I believe that as we both move toward more invulnerable methods of retaliation, this will continue to be an offset position until we can enter into a treaty in which we have confidence, a treaty that will be enforceable and real.

Mr. DADDARIO. Well, taking that into consideration, are we doing, then, enough in the civil defense area? Are we doing enough so that in case we are wrong, since there is no present capability of destroying any missiles which can come down upon us within 10 or 15 minutes, are we doing enough so that our people can be protected to the best of our capacity?

Secretary GATES. Well, the civil defense area, other than the military contribution to plans, are not my personal responsibility. Gov-

ernor Hoegh is in charge of civilian defense. I think he would be the best witness in this respect.

Mr. DADDARIO. Isn't it part of our defensive capacity to be able to withstand a blow and get up from there? And taking into consideration that, plus the geographical distribution of the Russian strength over such a large mass area, doesn't it fit into the picture as to the kind of retaliatory blow we could strike against them, in order to paralyze them. Civil defense certainly has a part to play, does it not?

Secretary GATES. Unquestionably.

It is a piece of the problem and an important one. At the moment under my responsibilities, and the Joint Chiefs of Staff, we believe that the strategic capability we have from a military point of view is the deterrent.

Now a proper civilian defense program is also important as part of that deterrent.

Mr. DADDARIO. Do you think it is being adequately performed, insofar as programing into the future is concerned?

Secretary GATES. I think it is constantly under study and I believe there are five Governors here today discussing this very matter with the people who are responsible for the program, and reviewing it.

Mr. DADDARIO. I gather from that then, that you don't know?

Secretary GATES. I have stated that I felt it was important to have proper and adequate civilian defense. The degree to which the program and the details of that, I do not know because I have only the responsibility to supply the requirements that come to me from the military in carrying out these programs.

Mr. DADDARIO. That is all, Mr. Chairman.

The CHAIRMAN. Mr. King.

Mr. KING. Mr. Secretary, on the bottom of your first page and the top of the second page of your testimony, you point out that during the early days of our missile and space program we were confronted with an alternative. Either we devoted our efforts to reducing the weight of our atomic warhead, or we devoted our efforts to building up the thrust to accommodate itself to the larger warhead, and that we chose the alternative of working on a reduction of the size of the warhead.

Secretary GATES. That is right.

Mr. KING. Presumably the Russians were confronted with the same two alternatives. Presumably they chose the other course.

Secretary GATES. Yes.

Mr. KING. As a result of that, in part at least, they got into space first, they reached the moon first, et cetera, et cetera.

Would it be a fair statement then that the decision that we made was wrong and unimaginative, that we would have done better to have chosen the other course?

Secretary GATES. No. They made the decision sooner and probably with a less advanced technical knowledge.

We believe that the decision we made from a military point of view is correct. Because if we hadn't made this decision, we wouldn't be able to go into the more mobile, smaller systems that we see around the corner. So from a military point of view, it is more important to us to have a more invulnerable deterrent than it is to have very large weapons that are completely immobile. We believe the decision was correct.

It was not correct insofar as shooting the moon is concerned. Insofar as the scientific exploration of space is concerned. But from a military point of view, we believe it was correct.

Mr. KING. Then the Russians' advantage stemmed first from the fact that they did make this correct decision to start emphasizing larger boosters—that was advantage No. 1?

Secretary GATES. Sooner.

Mr. KING. And, No. 2, that they were in there a little before us. They were working at it 2 or 3 years ahead of us. Is that what you are saying?

Secretary GATES. They made it sooner, but they probably were making it on the basis of less scientific capability which permitted us to go the other direction.

Mr. KING. Well, was there any point of time in the development of our own history in which we officially recognized that the decision we made perhaps was a little shortsighted from the "exploration of space" point of view, and where we officially reversed ourselves and decided to emphasize size of boosters—or have we ever come to that stage?

Secretary GATES. We have not reversed ourselves from a military point of view.

Mr. KING. Perhaps Dr. York would like to explore that a little.

Secretary GATES. When we started the Saturn project is where we went into the big booster effort, without clear military requirements, for space scientific exploration—yes, Dr. York would be better than I am on this.

Dr. YORK. Well, those are the facts. I mean as far as the military missiles are concerned, we, to this day, believe that making them smaller is better than bigger and all of our advance programs are in that direction, the Minuteman and the Polaris.

With regard to space and particularly space exploration, the institution of the Saturn program was the first—well that, and the NOVA program were the recognitions of the need for larger boosters for space exploration purposes.

Mr. KING. When did we first conceive the Saturn program?

Dr. YORK. That was about 2 years ago.

Mr. KING. That was after Sputnik I, I take it?

Dr. YORK. Yes.

Mr. KING. May I ask one or two other short questions, Mr. Secretary: I am quite interested in the Minuteman. I have had some briefings on that by Dr. Ritchie and others, specialists in solid fuel.

I must confess, I can't see many, if any, advantages that the Titan and Atlas have that the Minuteman does not have, and I see many advantages that the Minuteman has that the others do not have, because of mobility which you referred to, because of its virtual instantaneous state of readiness to go off, and so on.

My question is, do your plans contemplate that the Minuteman will be given an increasingly important relative position to the other missiles? I believe you mentioned four major weapons systems. I would like to know what the relative position of the Minuteman will be as we look to the next decade.

Secretary GATES. We believe it would be relatively more important. However, we don't believe we will discard the inventory we will have

of Atlas and Titan missiles when we get the Minuteman operational. We believe we will keep the alternative ways of doing the same—carrying out the same mission. But we believe it will be relatively more important because we can have more of them, they can become more dispersed and to some extent, can become mobile.

Mr. KING. What can the Atlas do that the Minuteman cannot do?

Secretary GATES. Carry a bigger warhead.

Dr. YORK. With more accuracy.

Mr. KING. I think I have just about 1 more minute. I am interested in this figure on page 7, of \$2.4 billion which you refer to. This figure, you say, includes separately identified funds in the procurement budget for development tests and evaluation of large missiles.

Would you like to explain that figure just a little more? I want to be certain what that covers.

Secretary GATES. That is the figure that Dr. York's research and development organization is responsible for. It is the total research effort in missiles. It does not represent the production effort, the construction effort that is involved in the missile program which would have to be added to it.

This is the research effort in the total missile program.

Mr. KING. Would that figure cover both the DOD and the NASA?

Secretary GATES. No, this is Department of Defense.

Dr. YORK. It does not include the DOD space related programs, either.

Mr. KING. Would it be possible for you, offhand, to come up with a figure that would represent our total space budget, both DOD and NASA, both production and R. and D., the whole thing?

Dr. YORK. But this isn't space. This 2.4 is the missile program.

Secretary GATES. Mr. King, it is possible because we have in our budget presentation, that you can extract from the line items the information that you would want. Or we can help you do this for the record if you would like.

Mr. KING. You wouldn't have that figure at your fingertips, would you?

In other words, when people ask me as a Congressman, "Well, what are we spending on space this year?" and when they say "space", they include missiles—they are wrapping the whole thing up in one package—

Dr. YORK. This includes missiles that go 4 or 5 miles, too, of course.

Mr. KING. What can I tell my constituents when they say, "What are we spending this year on space?" Is there some figure I can give them?

Secretary GATES. We are spending over a billion on Atlas, a billion on Titan, just under a billion dollars on the Polaris in the 1961 program.

On research, I would say we were spending \$5 billion. That would have to be checked. That is the total effort, in round numbers.

Do you want space separated out from missiles?

Dr. YORK. Everybody has his own definition of space, Mr. King.

Mr. KING. I grant you that. Perhaps my question is an impossible one, but I was trying to get as big a package as possible.

Secretary GATES. \$5 billion or \$6 billion on space, plus missiles.

The CHAIRMAN. Mr. Roush.

Mr. ROUSH. Mr. Secretary, I want to be sure I understand your position. Do I understand your position to be that right now we have no military requirement for a larger booster?

Secretary GATES. That is correct.

Mr. ROUSH. Now, the military value of a missile is not restricted to its ability or inability to carry a bomb, is it?

Secretary GATES. The military value of a booster depends on the job you want to do. In the missile program, it is carrying a warhead. In the satellite program, it is for other purposes.

Mr. ROUSH. It has seemed to me that the Department has taken the attitude that its military value is restricted to its ability to carry a warhead. Now I want that—

Secretary GATES. No. No. No.

Mr. ROUSH. Isn't that the reason we didn't go into a larger booster back in 1953?

Secretary GATES. Yes; I think it is. We were trying to develop the most efficient intercontinental ballistic missile program we knew how to build. But we are not solely interested in intercontinental ballistic missiles. As I explained to, I think, the Chairman, in response to his initial questions, we have projects—and I have them listed in my statement—for reconnaissance, communication, navigation, and early warning that don't carry warheads. They are put up in space for other purposes.

Mr. ROUSH. Our present booster is sufficient to take care of our present needs in that field; is that correct?

Secretary GATES. That is correct.

Mr. ROUSH. Doesn't the possibility of a landing on the moon have military value?

Secretary GATES. Yes. We believe it will have. We haven't specifically spelled it out, but we believe when man becomes able to operate in the environment of space, military requirements will develop.

Mr. ROUSH. Doesn't the possibility of interplanetary travel also hold military possibilities?

Secretary GATES. Excuse me, sir, I didn't hear you.

Mr. ROUSH. The possibility of interplanetary travel, that also holds military possibilities, doesn't it?

Secretary GATES. I think anything that starts to use people in that environment is going to develop military requirements.

Mr. ROUSH. And doesn't the military contemplate moving supplies by missiles?

Secretary GATES. Probably somebody has a dream about it.

Mr. ROUSH. And also men?

Secretary GATES. Yes.

Mr. ROUSH. And the military contemplates using space platforms?

Dr. YORK. We contemplate the possibility we may need them and, therefore—

Mr. ROUSH. Well, those possibilities existed some time ago, didn't they, when we made our decision to go into the smaller booster?

Secretary GATES. The important thing from the standpoint of our responsibility is to be sure that we have proper retaliatory capability after we sustain a surprise attack, with Soviet initiative. We have contemplated building the best weapons systems for this purpose.

Mr. ROUSH. What I was getting at, Mr. Secretary, was that you stated from a military standpoint, the decision which was made to go to smaller boosters was not wrong?

Secretary GATES. That is right.

Mr. ROUSH. Well, these same possibilities that required a larger booster existed at that time and it would seem to me that it was a wrong decision from the military standpoint as well as from the civilian space program standpoint.

Secretary GATES. I don't know whether they existed in 1953 or not. This has moved terribly quickly.

Mr. ROUSH. The Russians seemed to see it.

Secretary GATES. I don't know.

Mr. ROUSH. Well, if we had spent more money at that time, we would have had both, wouldn't we? We would have had our space program and we would have had our defensive program?

Secretary GATES. I guess that is correct.

Mr. ROUSH. That is all, Mr. Chairman.

The CHAIRMAN. Mr. Secretary, may I ask you a question or two at this point: We are going ahead with the Polaris submarine although as you have stated there, it has never really been tested.

Secretary GATES. As a system, Mr. Chairman.

The CHAIRMAN. As a system, but regardless, we are going ahead and I want to commend you for going ahead with it. I think it is a good program.

Now, what do you think we should do with the Nike-Zeus program? That is the only system offered to us that has a possibility of defending our country against these Russian ICBM's.

Secretary GATES. The Nike-Zeus program, Mr. Chairman, was given the most comprehensive review by the scientific people both under the President and under the Department of Defense, having in mind making a clear-cut decision on whether or not we should go into production or whether we should continue with full-scale tests or whether we should cancel the program.

I mean to really make a decision on it. And the best judgment we can get is that we should do exactly what we are planning to do. That is to carry out full-scale tests in the Pacific to determine the future course of the system.

I would say that there are many more scientific and technical doubts—they may be proved to be false—but there are more scientific and technical doubts about the Nike-Zeus system than there are about the Polaris system.

The CHAIRMAN. The same decisions are involved, however, and that is whether you will go ahead. Now, Mr. Secretary, for the first time we are face to face with the fact that the Russians can reach us without ever leaving their homeland and destroy this land. And the only system that has been presented to this committee which would hold out the possibilities of preventing that from happening—except by retaliatory means—the only system is the Zeus.

Now, a year ago we took up the question and at great length we heard testimony of those proponents of the Nike-Zeus program who felt that we ought to go ahead with that program because it was the only hope that we had of preventing destruction and terrible devastation in this country in the future.

When are we going to finally make a decision on whether we will go ahead with that program?

Secretary GATES. It is a very important decision, Mr. Chairman, and the Secretary of Defense went to great means to try to get the best and most comprehensive advice that he could possibly get on it. There are technical difficulties with the Nike-Zeus that may be so serious that it might be unwise to go ahead with it. However, we are recommending a new obligational authority of a sizable amount of funds to find out exactly what the perimeters are of these technical problems. We know of no better way to proceed with a system of this magnitude and importance insofar as putting it into production is concerned, than to go ahead with testing as far as we are.

The CHAIRMAN. A committee mentioned by Mr. Teague has suggested we proceed immediately on this program. Is that correct?

Secretary GATES. There have been study groups who made that recommendation.

The CHAIRMAN. Did we overrule the study group?

Secretary GATES. I don't know exactly what study group Mr. Teague is referring to, but we reviewed it with great detail for 6 months.

The CHAIRMAN. My criticism would not be that you haven't taken long enough time to look into it. It is the reverse, that we haven't made a decision on the one hope that this country has of preventing devastation in the event actual hostilities should exist. And yet we pause and we study and we restudy.

Last year, as I say, this committee had a great deal to say about the Nike-Zeus and we went to Alabama to study the program down there, and Redstone, and we came back, many of us, feeling that that ought to go ahead at all possible cost.

Mr. FULTON. Not unanimously.

The CHAIRMAN. It wasn't unanimous, but the majority, I think, was with the program and certainly those who hoped we could prevent fearful devastation, recommended that.

Do you have any idea when we will reach a decision?

Secretary GATES. We will carry out comprehensive full-scale tests and will either prove that this is as good a system as it may well be, or it will prove that it is a system that has so grave deficiencies in it that it would be unwise to produce it.

In the meantime, Mr. Chairman, we are doing a great deal of research work on other possibilities.

The CHAIRMAN. Mr. Teague.

Mr. TEAGUE. Mr. Secretary, there is much concern in Congress that a lot of these decisions are monetary decisions.

Secretary GATES. This one was not.

Mr. TEAGUE. I was interested that the President did not direct your budget, but that the budget was made up within the Defense Department.

Secretary GATES. That is correct.

Mr. TEAGUE. That was your statement, was it not?

Secretary GATES. That is right.

Mr. TEAGUE. Of course, we all understand that your Joint Chiefs would disagree on where the money should go, but you did say that on an overall basis, there is agreement on the budget among the Joint Chiefs?

Secretary GATES. The Joint Chiefs assured Mr. McElroy and when I took office, I confirmed it with them. They will support the total program.

Mr. TEAGUE. One other question: It was reported in the press recently that considerable money was not spent by the Defense Department this last year, that Congress appropriated. Was that a Defense Department decision, or a Bureau of the Budget decision?

Secretary GATES. A Defense Department decision.

Mr. TEAGUE. Those are all my questions, Mr. Secretary, but if my recollection is correct, Mr. McElroy appointed a study group on the Nike-Zeus?

Secretary GATES. That is correct.

Mr. TEAGUE. And they recommended to go ahead with it and then at Dr. York's level, it was overridden?

Secretary GATES. It wasn't only Dr. York's level, good as that level is. This was done by the President's Scientific Advisory Group, also, in addition to the Department of Defense consultants, we brought into it.

This was a very vital decision from the standpoint of national security and I assure you that it was made with the best technical advice that we could get.

Mr. TEAGUE. And a lot of money, too?

Secretary GATES. If the Nike-Zeus system was ever put in production and installed in the United States, it would be the most expensive thing we have ever done, but this is beside the point if it is the only antimissile system and if it is really effective. This is something that we have to consider.

The CHAIRMAN. It is worth almost any price if it is effective.

Mr. Fulton?

Mr. FULTON. And that, of course, is the statement par excellence, whether the Nike-Zeus system is effective. So far, it has not been proved by anybody to be effective and to be able to stop incoming missiles in an effective way so that we would in the United States get defense. The whole problem has been to see whether the Nike-Zeus could have a wide enough reception of an angle of attack that it would really defend the United States.

Secondly, what parts of the United States could be defended? Because nobody ever said that it could defend the whole United States. Thirdly, on the type of missiles coming in, nobody has ever claimed it would protect against missiles launched from submarines or IRBM's, as distinguished from ICBM's.

Under those circumstances, it is a question of whether to go into the reception of missiles at the tail end of their trajectory or to try to intercept them at an earlier date in the trajectory and I, for one, hope that you will continue your research on trying to get something which will intercept these ICBM's or will identify them at a much earlier date nearer their point of launch, and not be standing under an apple tree with an apron trying to catch every apple that falls off the tree. Because one of them is going to bang you on the head. And I think that is a strategic, basic error of the Nike-Zeus system; that we are under the apple tree with an apron trying to catch them, and all they have to do is flood the system. I don't know whether I am allowed to say the number we were thinking about, 3, 4, 5, or 6,

we will say, where the defense of the whole United States from one direction is involved, and if we put them to the north and the east, it wouldn't defend you from the northwest, the west, the southwest, the south, the southeast, or the east. And it would not in the least defend you against short distance missiles like IRBM's or missiles launched from submarines.

Is that not correct, generally?

Secretary GATES. You have expressed some of the doubts that caused the decision to be made. That is to have full-scale tests rather than to go into production.

Mr. FULTON. I have felt all along that should be done, and I thoroughly agree that it is a correct course and hope you will continue it.

I might say, with a grain of seriousness, I still hope you will try the Fulton system. It may end up in a different kind of a war, but I would get some sort of a system when these missiles start off, to energize them from the rear. All you do is keep passing them over instead of trying to stop them. Just give them another shove. It might end up like a volleyball game where each one keeps pushing the other's missiles on around the world. If it misses the United States it will land in the Pacific Ocean, in China or maybe in Russia.

May I compliment you on a couple of things. I want to compliment you particularly on the handling of the boron high-energy fuel program, and the changes there have been since the B-70 requirements have been minimized. I do hope that you will keep all the scientific teams working on those high-energy fuel programs in existence and move other projects to them. I feel as a matter of policy, the United States should not disband these scientific research and development teams.

Secondly, I want to compliment you on Maj. Gen. Donald Yates that you have named as the DOD Coordinator for the Project Mercury support. I feel that he is doing a good job. I served under his command down there as a naval officer at the Atlantic Missile Range, and I think that he will be a very excellent person to be reporting directly to you, Mr. Secretary, through the Joint Chiefs. I am glad to see that that is cutting out redtape and making a direct access.

Another thing I would like to say is that because some of us sat quiet here, does not mean that we agreed that more money or not enough money is spent on claims of fantastic weapons. I hope you don't get us off on a lot of these projects that some people claim will solve everything and that are very expensive.

Another thing I want to compliment you on is that you have not gone into a department store type operation on first generation missiles when we can see ahead of time these will not have a long enough strategic life.

For example, there have been claims last year that we should immediately get into production on some missiles that we then had, because we could look ahead and see in 1962 or 1963 that if Russia kept producing at her then capability, that we would then have much less in number of that type missiles than she had.

As a matter of fact, in missiles and rockets, I disagreed with one of the presidential candidates, about 6 or 8 months ago, Senator Symington, of Missouri, who had taken that strong position. I had

disagreed with it and I hope you will continue with the line that the administration has been taking.

Now, may I finally end with this: We have not had a war since 1953, so that obviously from that very fact, the Department of Defense has been doing a good job of preventing war and having a sufficient production and force level to prevent war. Is that not right?

Secretary GATES. We believe so, Mr. Fulton.

Mr. FULTON. And the second point is this: We should not begin to look at the Russian-type production as beginning in 1952, 1953, in looking at these missiles and their progress, but we should look at the period of 1945-46 when they really began to move ahead on these so-called space, or missile programs.

And if you take that whole period of development, you can then see how we, since about 1953, have not only been catching up to the tremendous lag that existed at the end of 1952, but we are also leap-frogging them in many fields. And we have certainly been competent and I would say that it has been a real race. Would you not say that is correct?

Secretary GATES. There is no question about the fact that they started earlier with a big booster effort and I feel that we have made enormous progress in very difficult times of technical change, in a way that has historically never been equaled before.

As I pointed out, the comparison between an ordinary airplane weapons system, and the time we have really been developing these complicated missiles. I think we can take great pride in what we have accomplished and I would like to continue to try to separate the military and the purely space exploration problem.

Mr. FULTON. I think that is a very good distinction that you made and I think it has been pointed out several times here that if we talk space and do not make our terms explicit, it then includes many of the military fields when as a matter of fact, this committee has no jurisdiction in the military field of space.

I want to say this. It has been, on the military level, on the Department of Defense budget, as far as appropriations have gone in the past few years, a matter of pride of both parties that the votes have been unanimous on the final votes for providing the Department of Defense with the money; isn't that right? In the House they have been unanimous votes.

Secretary GATES. Yes.

Mr. FULTON. So we have agreed across party lines as to what is necessary for the defense of this country during the past several years on appropriations. Is that not right?

Secretary GATES. I believe so; yes, sir.

Mr. FULTON. And, as a matter of fact, on that particular point in each case, the House of Representatives agreed unanimously on an amount less than the various services themselves totaled up, had asked for originally; isn't that the case?

Secretary GATES. Yes; this is historically correct.

Mr. TEAGUE. Say that again, Jim. That the Congress has given them less than they asked for?

Mr. FULTON. Less than each individual service had first come in asking the Joint Chiefs for in the budget for the particular year.

Secretary GATES. That is correct.

Mr. TEAGUE. Mr. Secretary, I am going to disagree with both of you because I think you are wrong. It is unimportant, but didn't the Congress give the Defense Department more money last year than they had asked for, and didn't they the year before? Didn't we provide, for example, 200,000 men in the Marine Corps and the money was not used?

Secretary GATES. I don't have the overall data—you did do that; yes, sir. And there have been individual items where there have been great differences, but I don't believe the total difference was very great in the total dollars. There were differences within the dollars.

But Mr. Fulton's point was that within the Department of Defense, the service submissions have always been greater, if they were added up, than the Department of Defense—the President's budget.

Mr. FULTON. And, secondly, that the Congress unanimously gave, too.

Secretary GATES. That is correct.

The CHAIRMAN. Mr. Anfuso.

Mr. ANFUSO. Just to finish up that point, when Congress finally got the figure, it was the administration figure that we got and we appropriated more money than has now been spent by the administration. I think you will concede that.

Secretary GATES. That is very definitely true in certain programs. For example, there was \$137 million to put Nike-Zeus in production that has not been spent, based on this decision.

Mr. ANFUSO. Mr. Secretary, I don't want to get political, and I have never been political on this committee. I hope as long as I remain a Member of Congress, I won't be political on this committee because the subject is of too much importance.

I think you will concede that if we had gone ahead, as you said we could have in 1953, with a massive rocket at the same time that we tried to develop a warhead, today we would be that much further ahead; isn't that correct?

Secretary GATES. We would be further ahead in the ability to put large payloads up in space for space exploration purposes; yes.

Mr. ANFUSO. We may have hit the moon before the Russians, we may have circled the moon before the Russians, we may have done those two things?

Secretary GATES. That is correct. We probably would have had to begin before 1953.

Mr. ANFUSO. Perhaps the reason we didn't do it is because we placed budget requirements ahead of defense requirements?

Secretary GATES. No, sir. We placed military requirements ahead of peaceful exploration of space.

Mr. ANFUSO. I hope that you will do that, Mr. Secretary. I said that you will be a good Secretary and I hope that you will be a lot different Secretary of Defense.

The CHAIRMAN. With reference to the question Mr. Fulton asked about the intercepting of these ICBM's at an earlier point in their arc than would be intercepted by the Zeus program, could I ask you here in open session, what progress, if any, we are making in that respect?

And how much money is being spent on that program?

Dr. YORK. It is still in the idea and study stage. There are a number of proposals from within the Air Force and from outside sources with regard to those possibilities.

The CHAIRMAN. So it hasn't gone beyond the study stage.

Now, let me say further, I agree with my colleague from Pennsylvania, Mr. Fulton, that we ought not to get into these ethereal realms, but as far as developing fantastic weapons is concerned, we certainly have to meet the Russians in their fantastic developments. I think that we ought to match blow for blow with the Russians, achievement for achievement.

Now, I haven't heard the Secretary refer to the guidance system, whether our guidance system is equal to that of the Russians, or whether theirs is superior to ours, but I have been watching these developments very closely and it seemed to me that the Russians are developing or have developed their guidance systems that are perhaps superior to ours, and I would like to get your statement in that reference.

Secretary GATES. I would like Dr. York to testify on guidance systems, Mr. Chairman, but I agree with you, I don't feel that we want to react to the Russians. I think we want to make progress and we want to pick up ideas that show promise and we try and do this in a very large research effort.

As I said earlier to one of you gentlemen, I think it is a question of selecting among good ideas. A lot of these ideas are good. Which one is better than good? When it is a little better than good, then we go ahead with it.

I believe we want to be on top of the Russians in everything, including space.

The CHAIRMAN. That is right. We want to be No. 1, not No. 2.

Mr. FULTON. Will you yield?

The CHAIRMAN. Mr. Fulton.

Mr. FULTON. I can't let the record stand that the possible interception of ICBM's from an enemy is simply at the study stage when the question comes up as to what research and development there might be before the Nike-Zeus system. I am a Reserve officer in the U.S. Navy and I can at least say for the Navy that there is something a lot more than study on previous interception of ICBM's. I won't go into the details, but it is certainly not study.

Secretary GATES. I think the indication is that there is nothing in development. There is real money spent on some of these ideas.

Dr. YORK. What I meant by study is the fact that there are study contracts let by the services to industrial groups, which are trying to determine on paper the feasibility of such systems.

I was answering in the short form rather than the long form.

To go on, most of them involve components of the type that are taken from other systems so that there is development work going on in most of the areas that would be needed if we were to exploit these ideas, but not under a contract which specifically sets out in a missile interception system, other than Zeus.

The CHAIRMAN. Mr. Secretary, if some of the members wanted to ask some questions in executive session, would you be available this afternoon for a while to be in executive session?

Secretary GATES. Mr. Chairman, I would like very much to be available to you and to the Congress. I have been testifying every day but 1 for 2 weeks and I would very much prefer to be excused, unless you consider it terribly important.

The CHAIRMAN. Dr. York will be available as a witness tomorrow, will he not?

Secretary GATES. Yes, sir.

The CHAIRMAN. Mr. Secretary, before we adjourn then, I want to say this, that if this committee at times seems to be a little critical, it is because of the anxiety that we as members of the committee have, regarding the security of our country, and I think that we are all certainly facing that direction and working in that direction.

I want to say personally, I have known you a long time. I have seen you move up in the Defense Department from one branch of the service to another, and I think you are most competent and capable and I want you to know that you are going to have in this nonpartisan committee, you are going to have the cooperation of the committee insofar as we are able to give you cooperation in defending this country and keeping it from becoming a devastated, washed-out country as a result of ICBM attacks.

I want to thank you very much for coming here and we appreciate it.

Secretary GATES. I appreciate your generous remarks, Mr. Chairman. I consider the committee is only carrying out its responsibility.

The CHAIRMAN. Thank you, sir; and the committee will adjourn until tomorrow morning at 10 o'clock.

(Whereupon, at 12 noon, the committee adjourned to reconvene at 10 a.m., Tuesday, January 26, 1960.)