

Transcript of Presidential Meeting in the Cabinet Room of the White House
Topic: Supplemental appropriations for the National Aeronautics and Space
Administration (NASA)
21 November 1962¹

Present at the meeting:

President John F. Kennedy

James Webb, NASA Administrator

Dr. Jerome Wiesner, Special Assistant to the President for Science and Technology

Edward Welsh, Executive Secretary, National Aeronautics and Space Council

David E. Bell, Director, Bureau of the Budget

Dr. Hugh Dryden, Deputy Administrator, NASA

Dr. Robert Seamans, Associate Administrator, NASA

Dr. Brainerd Holmes, Associate Administrator for Manned Space Flight, NASA

Elmer Staats, Deputy Director, Bureau of the Budget

Willis H. Shapley, Deputy Division Chief, Military Division, Bureau of the Budget

(Vice President Lyndon Johnson was scheduled to attend but did not.)

[Muffled laughter and conversations.]

President Kennedy: What I understand, it is a question of whether we need four hundred million dollars more to maintain our present schedule, is that correct?

James Webb: Well, it's very hard to say what our present schedule is. I think the easiest way to...to understand what has happened is to say that we started out after you made the decision in May to come forward with a driving program. We used the best information we had and we settled on late '67 or early '68 as the landing date. We wanted to have some leeway within the decade. Now this was a target date—we recognized we might have some slippage. We had some financial estimates at that time, which have proved to be too small, that the... the increased cost estimated by the contractor is partly because each of them has added to the cost that he submitted on his contract proposals to us. And second, we have added requirements to each of these vehicles.

¹ John F. Kennedy Library President's Office files.

Presidential recordings collection tape #63.

There are no excisions.

For additional information, please see recording log #63.

Transcript prepared by Dwayne A. Day. Additional assistance provided by Glen Swanson, John M. Logsdon, Stephen Garber, and Robert Seamans.

Now the combination of the increased cost now estimated by the contractors, plus our own increased knowledge as result of about a year's work, has led us first to confirm the fact that the late '67 or '68 date is a good date for us to have as our target date.

Second, that to accomplish that now and to run that kind of program that you want run, we have to go through a real strong, vigorous management period to shake down these things. Obviously you can make it an Apollo that would include a tremendous number of things that would cost a lot of money and probably are not necessary. On the other hand, you could make one that was too marginal and that we would not want to entrust [unknown]. We have to find a place in between as we go along with these projects.

President Kennedy: Tell me about, when you...when you say the contractors add to the cost, how do they get these contracts. They got them through bidding?

James Webb: Yes. What they do is they come in with a proposal.

[Two people talking at once; cannot distinguish who is saying what.]

David Bell: ...those are internal estimates, not contractor estimates that went out...[unknown].

James Webb: Here's what happens: we make an estimate within the Agency as to what the proposition ought to cost in terms of our own judgment of what we want to buy. We ask for proposals from the contractors. We evaluate those proposals and they submit an estimated cost on the basis of their own proposal. Now, this...we then select a contractor for negotiation. In the process of negotiation, we both together more clearly define exactly what apparatus is to be purchased and make a more accurate estimate of the cost.

President Kennedy: They are not fixed-price contracts?

James Webb: No sir, they are not fixed-price contracts. But in the process of defining the thing more accurately usually in this kind of business adds to the cost. And the contractor himself, of course, looks much more carefully when he has been selected. He is not now proposing. Obviously in his proposal he is going to put his best foot forward.

[Two people talking at same time; cannot distinguish what they are saying.]

President Kennedy: I know with the Defense Department, that all that for years when [it?] get lowered and we get errors in justifying the additional cost. What profit do we figure in? What profit are we allowing them?

James Webb: Well, we are pursuing two or three different policies. One of them is to try to enforce, in some cases, the fact that they get *no* profit from the increased cost. In other

cases where it's clearly a matter that we have added to the contract ourselves to accomplish the mission, it doesn't seem right that we shouldn't allow them their fee on this work. We are doing a great deal of work, Mr. President, in looking at this whole contracting process. But the point that I want to make—and leave clearly in your mind—is that this process of determining what you're actually going to use to land on the Moon, and exactly what specific guidance equipment goes in it, is a continuing process and a partnership arrangement between the contractor and the government. There's no other way anybody has figured out how to do it. And we will be making changes in it as we go along. The tendency for the contractor is to do a more expensive job. And it's a very hard management job to hold this in mind. And the kind of crash program that would be required if we tried to push this thing forward six months and do it in early '67 instead of late '67, I think would make...make us vulnerable to a good many pressures along this line we wouldn't have. I think we'll have a more orderly, better-managed program. We'll define these projects and projects and do a much better job of management of the program under the schedule of late '67.

President Kennedy: Let me get back to the second question. On this McDonnell motive the, uh, uh [reading from a chart] “strict limits were set against overtime” uh, are they talking about work on the Phantom or are there actually...haven't there have been any cutbacks [of] overtime work on Mercury and Gemini at McDonnell?

Brainerd Holmes: Yes, sir, there has been.

President Kennedy: Well, they weren't doing much overtime work, anyway, though, were they?

Brainerd Holmes: Uh, they were doing an average of fifteen percent and now they're down around three.

James Webb: Let me...let me explain... Because this is not just what you'd call a normal kind of cutback on account of money. In this project, the tendency of the technical people is to do everything looking forward to the lunar landing as soon as possible in order to learn the most from it so that you got more time to learn from Gemini. Now actually, we could do the Gemini twice, maybe as you will see from this chart, four months earlier than we have on our project schedule. On the other hand, we've looked very carefully when we drew up the budget at the possibility of delaying it for a longer period to defer the expenditures. What we've done is come with a program in that top line that we believe gives us the information at a time it would be most useful to us and is the most reasonable schedule considering all factors. Now, McDonnell has phased down its engineering on the Phantom. And while there is a lot of production work to do on the Phantom, they've got engineers, a large number of engineers they'd like to put to work. So they say, “Why don't we speed up here; we've got resources.” They also have in mind that if they could speed

this up and make the flight date they might sell some of these vehicles to the Air Force...they have every reason for wanting to speed it up on our money.

We feel, including the management of our money, what we have is a program that's best fitted for us. Now, I went out to McDonnell ten days ago myself and sat down with McDonnell and all fifteen of his people. He would then say, "I want to spend twenty-five million dollars a month on this program." I said sixteen million a month is all you can spend and we are gonna judge you on the...the cost of this project as well as the technical efficiency. So there you have the difference between twenty-five million he'd like to spend and sixteen million we've allocated.

President Kennedy: Now, the Gemini has slipped how much?

James Webb: Well, you can't.... This word "slip" is a wrong word [too many talking at the same time; loud laughter].

Robert Seamans: First shot is in '63.

President Kennedy: That's, uh, what? That's unmanned, what, two men around the world how many times?

Brainerd Holmes: This is August of '63. Unmanned suborbital flight, not orbital at all, to check reentry of the heat shield and so forth. That's a circle. That's now here in December. First manned one, which would be orbital, which would be with two men, was here in October of '63 and is now here in February of '64.

President Kennedy: That would be two men around the world how many times?

Brainerd Holmes: We haven't really decided how many times. The thought right now is three to six, but we would have a capacity, capability of going for a long time, a week...two weeks is what we're building in the basic design.

President Kennedy: When do you expect to do two weeks?

Brainerd Holmes [pointing to a chart]: Well these...these flights here, if we look at the without...without the supplemental, these flights are...are flights of two weeks flights and I'd expect this one, for instance, to be two weeks, and these and these. Actually, I suspect both would be one week. We got two weeks' capacity, but we really expect to have a hundred percent of it done in these early flight one week duration.

President Kennedy: Two men, one week.

Brainerd Holmes: Two men, one week.

President Kennedy: The summer of '64.

Brainerd Holmes: Summer of '64. Now, without then it gets down into here, you see? [Referring to chart.] This is without, this is with supplemental.

President Kennedy: I see. Without the supplemental, the, a....

Brainerd Holmes: Without the supplemental, summer of '64, as you said.

Brainerd Holmes: About a third of a year's difference, actually.

James Webb: Now let me point out one of these....

Brainerd Holmes: Now, let me be sure that you understand what the supplemental is. It's not simply with the supplemental. It's starting now, on a deficiency....

James Webb: Precisely, that was the point I wanted to make.

President Kennedy: What does that mean?

David Bell: That would mean that you would have to declare that this matter is so important to the national security of the country, [to suspend?] the normal apportionment rule which governs the spreading of funds that have been appropriated by the Congress over the full year. And without waiting for the supplemental, which probably couldn't be enacted until next March or April, starting today, you order them to spend at a rate which assumes that the supplemental will be enacted.

President Kennedy: Yeah, that is because we can't get a supplemental. Isn't it then?

Unknown speaker: That's right.

Brainerd Holmes: Well, that's the only way these...the schedule could be met.

[Many people talking at once]: Well, that's assuming that we run out of funds before...cart before the horse....

President Kennedy: What is the significance? Let's say you get that thing all...everything moved ahead a third of the year. How does that later affect your...your, uh....

Brainerd Holmes: Well, I'll give you the next chart, the lunar landing, and show you the effect on that. The effect that this would have is is somewhat hard to determine because if everything went the way we anticipated in the design of our Apollo, there'd probably be

very little effect on the Apollo. But if we found by these one-week missions, you see, things that we don't now think are going to happen—such as, well, adverse effects from zero gravity and [disease?], and anything like this, it might affect the design of the Apollo. Everything going well I would say, that, uh, given this experience, it wouldn't particularly affect this schedule, which is affected in itself, however, because of the need for funds. And that schedule, uh, that one shows.... Once again, this...this schedule which is without the supplemental funds and it shows the first manned flight February of '65 in the Apollo.

Hugh Dryden [?]: Around the Earth only....

Brainerd Holmes: Around the Earth, Earth orbital, right.

President Kennedy: That would be, uh.... When will that be? That will be the....

Robert Seamans: The Apollo command module, and three men, the Apollo service module and all three men.

[Talking all together—cannot distinguish what is being said.]

Unknown speaker: And around the world is only a few more....

Brainerd Holmes: Yes. You could certainly go up to a week if you wanted to; you'd have two weeks' capacity. Now with the supplemental funding, our schedule dates would have shown that it was here in December of '64 for the first manned flight instead of here...yeah, February of '65. First lunar landing we go over that we could use a larger vehicle would move from May of '67 by six months to October 1967.

President Kennedy: Now to move it to May of '67 instead of October, how much would you estimate that we would have to spend in addition between now and then? How much this year, how much....

James Webb: Four hundred and forty million roughly for '63, isn't it?

Brainerd Holmes: Yes, four-twenty-seven, something like that. Four-hundred-plus million for '67. And in both these schedules, it's estimated that the funding levels for the following years would be just the same. In other words, both of these have an estimate between three-and-a-half and four billion dollars for each of the succeeding years.

James Webb: He uses the wrong year. It's four hundred and twenty-seven million for 1963 as a supplemental, and it assumes the six billion two hundred million for 1964....

Robert Seamans: The four-point-six is for the manned lunar landing?

Unknown speaker: Can you tell us what is the breakdown between Apollo and Gemini is in that four hundred and twenty? Because I gather you say the Gemini is....

[Group discussions again; cannot distinguish words.]

Unknown speaker: Gemini is about eighty million....

Unknown speaker: So it doesn't make a big difference....

President Kennedy: In other words, the question is, can you put it simply to say that with the four hundred and forty million dollars that we are taking out, we're not assured, but we are taking out assurance, insurance, that we will not have a six-month slip; is that true?

James Webb: Yeah. I would say that you are taking out some insurance against the slip provided you could obligate the money now. But the problem that we face is that even if you gave the Director of the Budget the authority to...to waive his normal obligation rules and we obligated the funds, then we come into next year and don't get the money, we've got a terrific dislocation of a massive effort that involves many people all over the United States.

David Bell: It also a question of whether you really could make a national security finding on it, Mr. President. The [Deficiency?] Act is very strict on this....

President Kennedy: I think what you'd have to do is get the key members of Congress that are involved [if you're going to do it]. We'd have to first make up our mind and get them in. The problem is if they'd want to do it.

James Webb: The problem that we would face would be one of judgment. What would really happen if we, say, lost a hundred million out of that deficiency? Suppose Congress didn't give us all of it, and we'd have to be going through the Congress twice next year at a time when we are trying to get these contractors and everybody else to tighten up and to recognize cost.

President Kennedy: Jim, you'd say that you agree with the argument that for four hundred forty million dollars you'd save six months?

James Webb: I don't think you'd save six months...when it comes to Apollo, I doubt very much it would expedite the landing. This is my personal opinion. I think that you would be shoving the work into the first part of the period, and you would learn more from it. You'd would have some insurance of making the landing in late '67, '68 that you didn't otherwise have. But I think also the...the cranking up of an effort that involves thousands and thousands of people over here running on the basis over five years with assurance all the

way along the line that the kind of decisions you're going to make not going up and down and having a lot of confusion about it might also have a real effect on when we make the landing and the success we have in it.

President Kennedy: So it's your view that with the four hundred forty million...you'd probably...your judgment is you won't really save any time, is that correct?

James Webb: In the lunar landing I doubt very much if we'd save much time. You can schedule it, you can go through the PERT system. Bob Seamans will say yes, we...we will very likely save from four to six months. But from a general overall look at how these big programs run, I doubt if we'd save very much time. Now Bob, I think you ought to say your own views because you are the operating head of this operation.

Robert Seamans: I think I agree with you, Jim, that you can schedule six months earlier but you have to understand what these dates really are. These are dates for the internal management of the projects. They have to be dates that people believe are realistic. I mean, you have to have a fighting chance to achieve these dates but they're by no means dates that you can absolutely guarantee at this time, because this is a development program, and you are learning as you go along, and if you crank up too much of a crash program and you start running into trouble, it can take more time to unsort the difficulties than if it is a better paced program.

James Webb: A better way to state what I was trying to state. I think we can do in an orderly way what we've scheduled. I think the [other] will provide quite a series of crises in the course of it which we'll [unknown]. But which we will in a sense put your attention on the crisis at the moment rather than [attention?] on a five-year program running away to get us the most for our money, and make the best record for what you can do with this kind of a statement.

Hugh Dryden: That's one way of looking at it. Proceed on the assumption that you do not meet any unexpected obstacles, this is an assumption which from experience that we know is not completely accurate. In Mercury, for example, we started scheduling, as I recall, eighteen to twenty-four months, actually made our mission in thirty-nine months. Why the delay? There was two principal factors. One was a structural problem we encountered in the Atlas that took six or eight months to resolve. Another was a failure in the transistor guidance system that caused us to blow up one of these vehicles that saved the capsule all right. These two experiences which you don't foresee in your schedule are the things that stretch it out. This is one reason we do not like to see a public commitment that we're gonna land in '67. The [unknown] end of the decade. For purposes of keeping the pressure on, you schedule it as tight as you can.

James Webb: And if you notice that this Gemini schedule up on the chart is about as tight a schedule has ever been put together. You see there's one unmanned suborbital flight and the next flight's got two men in it. Now this is quite a commitment to make.

Robert Seamans: That is, even this one here, the top one, is twenty-six months from the date we initiated the program.

Hugh Dryden: The only reason you could do that because Gemini is a scaled-up Mercury; you have the Mercury background.

Unknown speaker: Right....

Hugh Dryden: You have some confidence to check out the system. You can proceed immediately from that. If it were totally new, I don't think you would dare say move to the man on the second one.

Brainerd Holmes: There is such a short time between now and the first Gemini launch that it is true that it's somewhat optimistic that you make up that time. However, I think in the Apollo, the money spent is being spent to do things that...I feel that...that will pick up the time, or at least give you confidence in the schedule. We're money-limited right now on things we should be doing.

James Webb: Can I say just two other things that I think that are important.... We are creating, I think, here, a better kind of partnership between government and industry than we've had in many of these big programs. We've learned a lot from the Defense programs and the others. I think we're going to come out of this with a much better partnership arrangement. But I think industry has got to get more cost-conscious about these things. And we have this in a driving effort. I would worry about saying to industry, "Just get going; money is no object." Because you can add not this four hundred and twenty-seven million dollars, but you can add vast sums beyond it. We've got to make industry conscious of costs here. We have been alarmed at these large increases, and have fought tooth and toenail with these people. I've created a little group of five top executives, every one of whom have earned a hundred thousand dollars a year, right around my own office. I've got them as roving people out looking at these things to see [where their?] bad judgment as managers of large affairs is that what's going on is good. I'm personally going out. So Brainerd and Bob, you have spent some time with this. We have got a real job to do to make this thing come out without a scandal.

Now I think that one of our biggest vulnerabilities in the next Congress lies in two directions. Mr. Truman always told me as Budget Director never to give him a political judgment, to give him the facts, he'd make the political judgment. I think, as Agency head, I can talk a little bit of the political factor with you. The first one is that the aerospace industry has excess capacity. The Boeing Company, Mr. Allen, came to me and said that

whereas we are scheduling three thousand nine hundred men at work on the first stage of the Saturn at the Michoud plant, which is part of this Apollo program, he was prepared to put seven thousand men on it right away, earliest possible time, if we really wanted to move and advance Saturn as fast as it could be moved. Now this is...this is the kind of telescoping into the early years of tremendous cost that would not make our budget six billion or six billion two, but would make it seven or seven-point-five. I think we'll get a better job with four thousand forty people on that first stage than seven thousand, you see.

Now this runs all the way through. I gave you the McDonnell figures. As he scales out his engineers on the Phantom, he would sure like to put them on Gemini because he's got a chance to sell that all around to the Air Force, others, make a great record earlier for himself and he retains these engineers for any possibilities that might come along, you see.

Now the second part I want to make to you beyond this excess capacity of the aerospace industry which our program just simply can't absorb. We aren't big enough to absorb that, as big as we are. The second part I want to make is with the success we have in the Congress has not been because, as Jerry sometimes says to me, "Just wave space at the Congress and they give you a billion dollars." It's because we really went forward to understanding on how to move forward with Congress. Now, in the case of the Senate committee, Senator Kerr, he had an absolute rule with his committee: he would not report out a bill until he got unanimity in the committee. If we put him on the line for a deficiency, then he is not in that position at all. He's got to get that deficiency soon; he's got to make whatever kind of arrangements even without a unanimous vote. Up to now, we've had a unanimous vote in the Senate committee and in the House committee, and on a roll call vote in the house, a unanimous roll call vote for this vote. This makes it a bipartisan program. Now, second...in other words, the tactics that have been employed would have to change. Second, I think our greatest vulnerability is not a change of tactics but an attack that will be made on us because of these increased costs. We are working as hard as we can to be in good position there. But there isn't any way to avoid the fact that having moved as fast as we have, I think we've made fewer mistakes than most programs have made, but we have made some. And some of these programs that we inherited. Every major program we've got except Apollo and Gemini were funded and started some other place and transferred to us. In the case of the Centaur we've got—shall I use the term mildly in the Cabinet Room, Jerry?—we've got a really a sorry record in the government and an even worse one [unintelligible, possibly "in industry"]. But we've moved to straighten it out. When Wernher von Braun took the step of writing a letter to Congress saying that he thought this ought to be canceled, I just about [unknown] for three days and put it up with Abe Silverstein in Cleveland. Now, this is the kind of thing we're having to do here to...to straighten out things that otherwise would cause us trouble. What I want to do to with Centaur is to get it in such good shape by next February or March that when Congress says, "Look at this terrible record," we say, "Don't look at the record; look at what we're doing now." Now we've got that kind of situation in these excess costs.

President Kennedy: What's the matter with Centaur?

James Webb: Well, there are lots of things that have caused us trouble. First, neither our own group in Huntsville nor the contractor recognized certain kind of aerodynamics requirements which were known at the time. In other words, the contractor himself built a vehicle that wouldn't stand the pressure of the advanced speed.

Robert Seamans: Well, that actually was a basic problem here. This is our first attempt to use a hydrogen-oxygen engine and I think they underestimated how tough it was going to be by a factor of three.

James Webb: That's the second part. You see, every upper stage of all our big vehicles is based on using liquid hydrogen as the fuel. You've got to store this, pump it, and burn it at minus four-twenty-three degrees.

President Kennedy: What contribution is the Centaur going to make? What are you going to get out of Centaur?

James Webb: Well, the first thing we are going to get out of it is a fifty-percent reduction in the cost of our planetary shots. We can do the planetary shots with a Centaur for about twenty-five million dollars, fifteen of which is for the spacecraft, and ten million for the Centaur. If we use the Saturn with a changed upper stage, it'll cost us fifty million, thirty-five million for the Saturn. This is worth fighting for, but more than anything, maybe you ought to speak on this, we want to lick the problem of using liquid hydrogen as a fuel in this small vehicle without having to do it in the big vehicles which are now beginning to come off the production line. Douglas has already delivered the first unit of the Saturn SIVB stage, which is now on the way to Huntsville for test.

President Kennedy: Now, let me just get back to this, what is your...uh, your view is we oughta spend this four hundred forty million?

Brainerd Holmes: My view is that if can strictly spend, it would accelerate the Apollo schedule, yes, sir. Let me say I was very...I oughta add that I'm very sorry about this...I have no disagreement with Mr. Webb...he says with the policy, oh, I think my job is to say how fast I think we can go for what dollars.

James Webb: Well, I think it's fair to say one other thing, Mr. President, that after your visit when you were saying how close this was, the speech you made. I think Brainerd and Wernher von Braun and Gilruth all felt, "We've got to find out how fast we can move here. The President wants to move." So they went to the contractors and said, "How fast can you move, boys, if money were not a limit?" Now, this sort of got cranked up into a feeling that this money was going to be made available, that a policy decision had already been

made to ask for the supplemental. And I think, to a certain extent, then, the magazines like *Time*, they picked this up in order to make a controversy.

President Kennedy: Well, as I at least hear, it wasn't so much that we wanted to speed it up as it was how much we were gonna slip...you don't like that word, but that's what we're talking about.

James Webb: Well, no, sir, I don't think so. The reason I don't like the word is that those schedules were never approved by Dryden, Seamans, or me. They were not officially scheduled flights in the Agency. But they were tagged as the schedule in order to ask the contractors how much they could do, for Brainerd to...to really get moving. When he came into this program.

President Kennedy: Are you saying that these dates were not ever set?

James Webb: They were not officially set by me or Dryden or Seamans....

President Kennedy: Were set....

James Webb: We were waiting to determine what the Budget Director was going to give us on the '64 budget to definitely set our dates. Because this made a big difference.

President Kennedy: You mean, what part of '67 was never set?

James Webb: Well, the '67 date has been set. And we're going to make it.

President Kennedy: What part of '67 was never set, is that correct?

James Webb: We talk all the time of late '67 or early '68.

Hugh Dryden: You never set a month....

James Webb: That's right.

President Kennedy: So now, when we talk about four hundred million, well now, tell me what's happened here. You had a date in your mind which unless you get the four hundred million you feel that's a good chance it'll go back to the end of until about six months. And, ah, Mr. Webb says that there was [n]ever a date in '67.

Brainerd Holmes: What's happened is this, I think. First of all, we didn't have a definitized program; we had to decide what size booster it would be, for instance, at the very end last year. So as soon as we could, we'd definitize all of the elements of the program but then still until one decides the mission which you are going to go you couldn't

interweave these schedules, you couldn't decide *really* what kind of a program you're gonna have and what kind of funding you're gonna have. So once we assumed what the mission would be in June going with this LOR, and I am not here talking about one mission versus another, but *a mission* to justify schedules. So I'm gonna put down all the details hundreds of schedules that interweave, we came up with costs associated with those schedules, and these costs and dates came out to be this first schedule which appears to be a not unreasonable schedule done on a crash basis. Further than that, just as Mr. Webb has said, the contractor estimates were low; our estimates of what they required were low; all that information was pouring in. We put the two together to go versus this time with these dollars that we had as estimates, it came out that we were short in Fiscal '63. So we didn't know that before that.

James Webb: So then we started talking to the Budget Director.

[Many people talking all at once.]

Unknown speaker: August and September.

Hugh Dryden [?]: Mr. President, may I say one more thing which I think you should keep in mind. Practically every program at this point that we've ever had has grown by a factor between two and three in cost from the beginning to end. The Mercury was what? About two and a half...three. I think you have to bear in mind that these program costs are still going to grow. I'm not sure that Jim or Brainerd will agree with me. On any schedule you pick, you're going to have to face increasing cost year after year, in my opinion. And if we find some trouble, which undoubtedly we're going to find, intangibles stretch and go up in cost. And depending on the level you select now, the rate in which the costs are going to accelerate on you in the future years will be determined.

Unknown speaker: Mr. President....

Unknown speaker: Compared to future years....

Hugh Dryden: I think we learned a great deal from Mercury. As far as the so-called increase in Mercury. For the [honest] definition of what Mercury included. We started an estimate of what the McDonnell contract would be to build a capsule. But Mercury involves not only the capsule, it involves a worldwide tracking network; it involves ground support equipment for handling the capsule on the ground, check-out equipment. And we were learning with Mercury we kept adding new elements, new revisions to the cost, so that it did wind up Mercury cost five hundred million dollars all total. Two dollars and a quarter for each person in the United States, seventy-five cents a year for three years, if you want to look at it that way. And there's no question that it cost a large sum. Now in this analysis, the number of man-hours and years is inexpensive; again working out these numbers, it looks fantastic compared with the corresponding figures on Mercury.

James Webb: We know a great deal more.

Unknown speaker: I think this is a much sounder basis. I would be surprised if the cost went up by three....

Robert Seamans: I would be surprised if it went up more than sixty percent.

Unknown speaker: But that's still a lot of money!

James Webb: Well, let me make a statement on that I have made to the Budget Director. You remember when I first talked to you about this program, the first statement I made to Congress was that the lunar program would cost between twenty and forty billion dollars. Now I am able to say right now it's going to be under the twenty billion, under the lower limit that we used. The question is how rapidly you spend the money and...and how efficiently you manage this so as to get the most possible for the money. This can be speeded up at the expense of...of certain things which I outlined in this letter to you. It can be slowed up if, a year from now, we find that we don't have to proceed at this basis. But this is a good, sound, solid program that would keep all of the governmental agencies and the contractors and the rest moving ahead. But we're prepared to move if you really want to put it on a crash basis.

President Kennedy: Do you put.... Do you put this program.... Do you think this program is the top-priority program of the Agency?

James Webb: No, sir, I do not. I think it is *one* of the top-priority programs, but I think it's very important to recognize here...and that you have found what you could do with a rocket as you could find how you could get out beyond the Earth's atmosphere and into space and make measurements. Several scientific disciplines that are the very powerful and begin to converge on this area.

President Kennedy: Jim, I think it is the top priority. I think we ought to have that very clear. Some of these other programs can slip six months, or nine months, and nothing strategic is gonna happen, it's gonna.... But this is important for political reasons, international political reasons. This is, whether we like it or not, in a sense a race. If we get second to the Moon, it's nice, but it's like being second any time. So that if we're second by six months, because we didn't give it the kind of priority, then of course that would be very serious. So I think we have to take the view that this is the top priority with us.

James Webb: But the environment of space is where you are going to operate the Apollo and where you are going to do the landing.

President Kennedy: Look, I know all these other things and the satellite and the communications and weather and all, they're all desirable, but they can wait.

James Webb: I'm not putting those.... I am talking now about the scientific program to understand the space environment within which you got to fly Apollo and make a landing on the Moon.

President Kennedy: Wait a minute—is that saying that the lunar program to land the man on the Moon is the top priority of the Agency, is it?

Unknown speaker: And the science that goes with it....

Robert Seamans: Well, yes, if you add that, the science that is necessary....

President Kennedy: The science.... Going to the Moon is the top-priority project. Now, there are a lot of related scientific information and developments that will come from that which are important. But the whole thrust of the Agency, in my opinion, is the lunar program. The rest of it can wait six or nine months.

James Webb: The trouble... Jerry is holding up his hand.... Let me say one thing, then maybe you want to [unknown] the thing that troubles me here about making such a flat statement as that is, number one, there are real unknowns as to whether man can live under the weightless condition and you'll ever make the lunar landing. This is one kind of political vulnerability I'd like to avoid such a flat commitment to. If you say you failed on your number-one priority, this is something to think about. Now, the second point is that as we can go out and make measurements in space by being physically able to get there, the scientific work feeds the technology and the engineers begin to make better spacecraft. That gives you better instruments and a better chance to go out to learn more. Now right all through our universities some of the brilliant able scientists are recognizing this and beginning to get into this area and you are generating here on a national basis an intellectual effort of the highest order of magnitude that I've seen develop in this country in the years I've been fooling around with national policy. Now, to them, there is a real question. The people that are going to furnish the brainwork, the real brainwork, on which the future space power of this nation for twenty-five or a hundred years are going to be made, have got some doubts about it and....

President Kennedy: Doubts about what, with this program?

James Webb: As to whether the actual landing on the Moon is what you call the highest priority.

President Kennedy: What do they think is the highest priority?

James Webb: They think the highest priority is to understand the environment and...and the areas of the laws of nature that operate out there as they apply backwards into space. You can say it this way. I think Jerry ought to talk on this rather than me, but the scientists in the nuclear field have penetrated right into the most minute areas of the nucleus and the subparticles of the nucleus. Now here, out in the universe, you've got the same general kind of a structure, but you can do it on a massive universal scale.

President Kennedy: I agree that we're interested in this, but we can wait six months on all of it.

James Webb: But you have to use that information to....

President Kennedy: Yeah, but only as that information directly applies to the program. Jim, I think we've gotta have that....

[Unintelligible.]

Jerome Wiesner: [Unintelligible—"If you got enough time?"] Mr. President, I don't think Jim understands some of the scientific problems that are associated with landing on the Moon and this is what Dave Bell was trying to say and what I'm trying to say. We don't know a damn thing about the surface of the Moon. And we're making the wildest guesses about how we're going to land on the Moon and we could get a terrible disaster from putting something down on the surface of the Moon that's very different than we think it is. And the scientific programs that find us that information have to have the highest priority. But they are associated with the lunar program. The scientific programs that aren't associated with the lunar program can have any priority we please to give 'em.

Unknown speaker: That's consistent with what the President was saying.

Robert Seamans: Yeah. Could I just say that I agree with what you say, Jerry, that we must gather a wide variety of scientific data in order to carry out the lunar mission. For example, we must know what conditions we'll find on the lunar surface. That's the reason that we are proceeding with Centaur in order to get the Surveyor unmanned spacecraft to the Moon in time that it could affect the design of the Apollo.

President Kennedy: The other thing is I would certainly not favor spending six or seven billion dollars to find out about space no matter how on the schedule we're doing. I would spread it out over a five- or ten-year period. But we can spend it on.... Why are we spending seven million dollars on getting fresh water from saltwater, when we're spending seven billion dollars to find out about space? Obviously, you wouldn't put it on that priority except for the defense implications. And the second point is the fact that the Soviet Union has made this a test of the system. So that's why we're doing it. So I think we've got to take the view that this is the key program. The rest of this...we can find out all about

it, but there's a lot of things we can find out about; we need to find out about cancer and everything else.

James Webb: But you see, when you talk about this, it's very hard to draw a line between what....

President Kennedy: Everything that we do ought to really be tied into getting onto the Moon ahead of the Russians.

James Webb: Why can't it be tied to preeminence in space, which are your own....

President Kennedy: Because, by God, we keep, we've been telling everybody we're preeminent in space for five years and nobody believes it because they have the booster and the satellite. We know all about the number of satellites we put up, two or three times the number of the Soviet Union...we're ahead scientifically. It's like that instrument you got up at Stanford which is costing us a hundred and twenty-five million dollars and everybody tells me that we're the number one in the world. And what is it? I can't think what it is.

Interruption from multiple unknown speakers: The linear accelerator.

President Kennedy: I'm sorry, that's wonderful, but nobody knows anything about it!

James Webb: Let me say it slightly different. The advanced Saturn is eighty-five times as powerful as the Atlas. Now we are building a tremendous giant rocket with an index number of eighty-five if you give me Atlas one. Now, the Russians have had a booster that'll lift fourteen thousand pounds into orbit. They've been very efficient and capable in it. The kinds of things I'm talking about that give you preeminence in space are what permits you to make either that Russian booster or the advanced Saturn better than any other. A range of progress possible it is so much different [unknown].

President Kennedy: The only.... We're not going to settle the four hundred million this morning. I want to take a look closely at what Dave Bell.... But I do think we ought get it, you know, really clear that the policy ought to be that this is *the* top-priority program of the Agency, and one of the two things, except for defense, the top priority of the United States government. I think that that is the position we ought to take. Now, this may not change anything about that schedule, but at least we ought to be clear, otherwise we shouldn't be spending this kind of money because I'm not that interested in space. I think it's good; I think we ought to know about it; we're ready to spend reasonable amounts of money. But we're talking about these *fantastic* expenditures which wreck our budget and all these other domestic programs and the only justification for it, in my opinion, to do it in this time or fashion, is because we hope to beat them and demonstrate that starting behind, as we did by a couple years, by God, we passed them.

James Webb: I'd like to have more time to talk about that because there is a wide public sentiment coming along in this country for preeminence in space.

President Kennedy: If you're trying to prove preeminence, this is the way to prove your preeminence.

James Webb: It's not if you've got an advanced Saturn rocket...[unintelligible].

President Kennedy: We do have to talk about this. Because I think if this affects in any way our sort of allocation of resources and all the rest, then it is a substantive question and I think we've got to get it clarified. I'd like to have you tell me in a brief...you write me a letter, your views. I'm not sure that we're far apart. I think all these programs which contribute to the lunar program are...come within, or contribute significantly or really in a sense...let's put it this way, are *essential*, put it that way...*are essential* to the success of the lunar program, are justified. Those that are not essential to the lunar program, that help contribute over a broad spectrum to our preeminence in space, are secondary. That's my feeling.

James Webb: All right, then let me say this: if I go out and say that this is the number-one priority and that everything else must give way to it, I'm going to lose an important element of support for your program and for your administration.

President Kennedy [interrupting]: By who? Who? What people? Who?

James Webb: By a large number of people.

President Kennedy: Who? Who?

James Webb: Well, particularly the brainy people in industry and in the universities who are looking at a solid base.

President Kennedy: But they're not going to pay the kind of money to get that position that we are [who we are] spending it. I say the only reason you can justify spending this tremendous...why spend five or six billion dollars a year when all these other programs are starving to death?

James Webb: Because in Berlin you spent six billion a year adding to your military budget because the Russians acted the way they did. And I have some feeling that you might not have been as successful on Cuba if we hadn't flown John Glenn and demonstrated we had a real overall technical capability here.

President Kennedy: We agree. That's why we wanna put this program.... That's the dramatic evidence that we're preeminent in space.

James Webb: But we didn't put him on the Moon...[unintelligible].

Unknown speakers: [Unintelligible]...we did what we needed to do.

David Bell: I think, Mr. President, that you're not as far apart as this sounds. Because the budget that they have submitted, 464....

President Kennedy: I know we're not far apart, I'm sure, and the budget we may not be apart at all. But I do think at least we're in words somewhat apart. And I'd like to get those words just the same.

James Webb: It's, it's perfectly fine. I think....

President Kennedy: How about you writing me and telling me how you assign these priorities. And perhaps I could write you my own....

James Webb: But I do think it...it certainly doesn't hurt us to have this *Time* article that shows we are really going ahead with the program. I don't think that hurts the Agency; I don't think it hurts at all. You have tried several times to say that's number one. But I also think that as Administrator, I've got to take a little broader view of all the budgets here including those that are [unintelligible] appropriation in the Congress. I don't think we've got to use precisely the same word.

Robert Seamans: Could I state my view on this? I believe that we proceeded on Mercury, and we're now proceeding on Gemini and Apollo as the number-one program in NASA. It has a DX priority. Nothing else has a DX priority.

James Webb: And recommended four-point-seven billion funds for it for 1962! That's a....

Robert Seamans: At the same time, when you say something has a top priority, in my view it doesn't mean that you completely emasculate everything else if you run into budget problems on the Apollo and the Gemini. Because you could very rapidly completely eliminate you[r] meteorological program, your communications program, and so on. If you took that to too great of an extreme....

James Webb: And the advanced technology on which military power is going to be based.

Hugh Dryden: Mr. President, I think this is the issue. Suppose Apollo has an overrun of five hundred million dollars, to reprogram five hundred million dollars for the rest of the space program would just throw the whole thing all away. And I think this is the worry in Jim's mind about top priority.

President Kennedy: Listen, I think in the letter you ought to mention how the other programs which the Agency is carrying out tie into the lunar program, and what their connection is, and how essential they are to the target dates we're talking about, and if they are only indirectly related, what their contribution is to the general and specific things [unknown—possibly “we're doing”] in space. Thank you very much.

[Kennedy gets up to leave the room.]

James Webb: Thank you, Mr. President.

Unknown speaker: Thank you.

[Unintelligible as speakers shuffle paper and President and possibly some others get up to leave the room.]

James Webb: Dave, is there anything we can say about where we stand.... Now you see, one of the things that [Hogenfifer? unknown] said about [unknown] the cause of the delay and the lunar orbit [unknown] the sensitive nature of the budget decision. We have not wanted, at the top, to be too *firm* about the schedule. Brainerd had to be firm and drive people and say, “Get off; we got to beat these dates, you see.” The fact that Congress was so ready to put a pass on the budget—all of these things have sort of created the kind of situation...what are our next moves? Of course I'll write this letter...but that won't settle it. I mean, this will be a burning argument for the next twenty years in this country about what are the priorities in space.

David Bell: The action questions that are before the President revolve around the '64 Budget including the question of the '63 supplemental agreement.

James Webb: I thought your letter was a splendid presentation.

David Bell: Now this has to be settled in the next two weeks. You know the whole '64 budget is in the final stages, and this supplemental in the next couple weeks—it is all coming into focus, so that this isn't something that is gonna lag on.

Unknown speaker: Right.

James Webb: Then we don't need to do anything with respect to our contractors or Centers for that that period of time, other than what we've done, do we?

Unknown speaker: No.

David Bell: Now, the one element that occurred to me this morning during this conversation that we aren't as well buttressed on as we need to be is a complicated element: what would be required if we did decide that, starting now, to go on a deficiency basis. Is it a legal question, we might get our lawyers...we might get your lawyers to check this thing [today].

Unknown speaker: [Unknown.]

David Bell: I know [you] vote against a few but...[unintelligible].

[Unintelligible.]

Unknown speaker: If we cannot do it, we gotta have an answer. If you can or no you can't.

Unknown speaker: All right, here's what you'd have to do....

James Webb: We'll get Johnny Johnson right to work on it.

David Bell: And the political [unknown; "angle"?]. Who would you call in and what agreement would you try to get out of them. [Unknown.] If we decide we want to do this. We have to prepare a statement [how we're going to proceed?].

James Webb: You see, you got these problems. Congress isn't organized yet.

[Unintelligible, laughter.]

James Webb: I know that, but I want to say something that's important.... We don't know who'll be the chairman of the space committee the next time. Who do you think you'll wind up with. Chalmers was chairman of the public works committee and currently is in line to become chairman there.

Unknown speaker: He can't be the chairman of both?

James Webb: Cannot be chairman of both.

Unknown speaker: Is the space committee a permanent committee in the Senate?

James Webb: Yes.

Unknown speaker: You only can have one, Jim.

James Webb: Now you see there are questions here about who you make a deal with.

Unknown speaker: Who's the number two?

James Webb: Uh...uh...well, I don't know, you got Dick Russell, you got Trent Madison. Assuming they stay where they are, Symington would be number two. But, uh, but again, we hear noises that Clinton Anderson decides to assert his seniority and take this and give up the atomic stuff. Now, so....

David Bell: He's head of Interior. He'd have to give up [that].

James Webb: He'd have to give up Interior.

David Bell: The atomic thing I don't think....

Unknown speaker: No. I don't know.

James Webb: But at any rate, Anderson has up or down been disqualified for space because he had another committee.

David Bell: Interior.

James Webb: He is now thinking of [unknown] I don't know about that. But seriously, I don't know...you'd have a real problem with who you'd make a deal with. [Unknown] or [unknown].

David Bell: That's an important point. These considerations, it seems to me...you can't quite prepare. It's not quite clear....

James Webb: Now, the second thing....

Unknown speaker: [Unknown] if they're [unknown] they're quite clear.

James Webb: The second thing that's very important to recognize is that you have six vacancies on the House space committee...as result of this election and certain changes that have been made. Uh...Teague moves up now to be the number one Democrat right behind the Chairman. He's chairman of manned space flight. He would start...wants to start hearings last week on the supplemental. But now the problem here is uh, uh...the Congress is not going to follow Teague.

Unknown speaker: You mean [not only would it be] Albert Thomas rather than Teague.

James Webb: Well, you've got George Miller, you've got Carl Albert of Oklahoma, you've got McCormick to deal with here. McCormick was on the space committee, takes a great pride in this.

David Bell: As a supplemental appropriation, we wouldn't take both authorization and appropriation committee?

James Webb: Well, both...appropriation committees...well, sure, sure.

So, so there's a real question.... Teague would immediately say, "Sure, I'll get this through. I'll get it through in sixty days." But what [unintelligible] think? Now all of this has to be thought through.

David Bell: That would be followed by the appropriations?

James Webb: Well...uh...he ain't got the votes. He...he could get you five or seven votes.

David Bell: You mean you're not sure he could get it through in sixty days?

James Webb: I'm not...listen, unless you had more [of a head?] you ain't gonna get it through at all.

David Bell: All right...that's what I mean. Yeah.

James Webb: I mean, his [judgment] is not the one that's gonna determine the issue in the House. Now you've got a reorganization of this committee. You've got at least two or three of the subcommittees to change chairman, in the House. Now all of this...you [called the second?] Albert Thomas the [unknown] subcommittee appropriations...Yancy and Malloy. Now uh, uh...what I'm trying to say is that the complexion of the Congress as it gets organized will have a bearing on this. And I don't think you can completely forecast that.

Now I want to make one thing very clear to you as Budget Director: as of this time, I have no intention whatever of letting Brainerd get the frame of mind that we're going to make up any overrun that he has on the other programs. So I'm telling the Budget Director right now that the allocations of money to you are prime and fixed and there'll be no overruns encroaching on our programs.

David Bell: You are aware that quite independent of Brainerd, uh, we have started thinking about what this kind of an attitude would mean to the '64 budget.

James Webb: Sure.

David Bell: We talked about [unknown].

Unknown speaker: Right. Right.

James Webb: Well I don't want [the attitude] to be confused by anything the President may have said here today.

Unknown speaker: Or to you, Jim.

[Laughter.]

Unknown speaker: I'll tell you what I think we need, you tell me what you....

James Webb: Well, before I was saying...I could see the political implications, and I could see his desire to say this is the number-one objective. But I see more of the troubles here beginning a year or two from now, they're going to need us, you see....

Dave Bell: I think it is important, however, Jim, to make clear to the President that you have in fact reprogrammed very substantial sums of money in the '62 budget already.

James Webb: Yeah.

David Bell: ...Within the manned lunar landing program.

Unknown speaker [Webb?]: Oh, we have....

[Unknown; multiple people speaking at once.]

David Bell: And also, if I remember correctly, items from other parts of the budget and to put them into the MLL program already.

James Webb: But basically, Dave, that based on the standpoint of making this program succeed....

[Multiple people speaking at once.]

Unknown speaker: A hundred and twenty million....

David Bell: Well, all right, that's the same thing.

James Webb: Now, now let me make one thing very, very clear. The real success of this program and what it does for this administration in terms of prestige and for the country

in terms of a position of preeminence is going to depend not so much on these target dates, but how this program is run. These birds are going to fly or not fly, not by what you put on the schedule or the amount of money you put in it, but the way this thing is run. As a matter [unknown] over the next year or two we have got to validate the capacity of the government to run a program like this in partnership with industry. This has not yet been proved! And the attitude, the philosophy within which you go, of a tight, hard-driving race here, watching the dollars, is going to be terribly important, in my opinion, in where you come out. And the easiest thing you can do is have this nice image we've got now, you blow it away by a bunch of foolish things.

David Bell: I don't think that the President or any of us has any illusions about that. We all think it's being run very well.

James Webb: Well, it's not being run too well! I'm saying to you we are more vulnerable to this kind of attack.

David Bell: [Unknown] you're improving it every day.

James Webb: We're running fast and trying to stay ahead.

David Bell: What we've been discussing this morning are legitimate questions that do need to be faced and met rationally and we make the best decisions feasible.

Unknown speaker [Webb?]: Absolutely.

David Bell: But this...none of this should be interpreted as a challenge to the basic management.

James Webb: No, but the distinction is the way that we present this, you see.... You go out and say this is the number-one priority and I'll tell you, between North American, Wernher, and Allen will be in and say, "I told you you could have seven thousand people; I want to put them on." You say, "No, sir, Mr. Allen, we're going to stick with the thirty-nine hundred," he immediately leaks that to the press, "Well, the President said it's the number-one priority." So this is the vulnerability too.

All I'm trying to say is...Dave, is...that we are running about three steps ahead of a pack of hounds. And we have got some real vulnerabilities to validate the capacity to do this thing which is almost beyond the possible anyhow.

Unknown speaker: Yeah.

Dave Bell: Well, I think you have a very fine opportunity now to make the request....

James Webb: I agree.

Dave Bell: To put before the President how the first...the real attitude....

James Webb: Sir, I'm on vacation....

[Many people speaking at once; laughter.]

David Bell: To some extent, the President is talking about what we really are doing; to some extent, he's talking about what we can say about it.

Unknown speaker [Webb?]: That's right.

David Bell: It's just as well to distinguish that...how we can respond.

Unknown speaker [Webb?]: Absolutely right. Absolutely right.

David Bell: [Unintelligible comments?]. . .publicly or his commitment.

James Webb: But, but...I think that, uh, to let *Time* magazine or any of these publications start to say that you need to be worried, by the fact they're saying that you don't give the lunar landing the number-one priority above everything else is, uh...uh...something that he ought to avoid. Because it isn't.... It doesn't have to be put to the country that way. I mean, I get around all these top people now; I've been traveling on the road and I've been with the real big dogs and I know the deal about what they think. How it ain't running the minds of the best people in the country.

David Bell: That's perfectly clear. But our problem is that we all work for the President and as far as he's concerned, as he very clearly expressed this morning, whatever we say [out there], the manned lunar landing program *is* the number one-priority program.
[Unknown.]

James Webb: Well, I want him to....

Unknown speaker: ...Everything that is associated or is necessary with making a manned lunar....

Unknown speaker: [Unknown] the way you presented your budget information was summed up to four-point-six billion dollars.

Unknown speaker: Well, we rearranged it a little.

James Webb: That sure is a high priority!

[Unknown; too many people speaking at once.]

Unknown speaker: Well, we agree.

James Webb: Dave, I have one final thing. You see, when we started out on this program, there was a pretty strong [unknown] from several top people in NASA, in planning and operations, that wanted us to abandon all the rest of this stuff. Said, said, you can't do it all. Now, I fought tooth and toenail here to avoid this implication that, that we are just a one-purpose Agency going to the Moon. And I hate to, to see that....

Dave Bell: I don't think that you understand what he was saying before. He's not saying abandon this other stuff. He is saying keep right on doing it; it's very important; but it doesn't have the same urgency as the Moon landing. That's what he means. [Unknown] number-one priority.

James Webb: But it does, though. In terms of the power of this nation it has.

David Bell: That's what you're....

James Webb: It may have more!

David Bell: That's what he wants you to argue to him.

James Webb: Yeah, that's when I'm gonna have a chance.

David Bell: The point is, that by saying the lunar landing program should be the number-one priority program, he is not saying throw the rest of it away.

Unknown speaker: Yeah. Right.

David Bell: You see? So don't, don't exaggerate in your mind what is the thrust of his argument, right? He's saying there's a difference in urgency between those parts of your program that relate to landing on the Moon and those that don't. And he would let the others slip a little....

Unknown speaker: Well, he wouldn't let them....

David Bell: [unknown] and the MML program. That's all. He isn't saying you would drop out the rest of....

Unknown speaker: I don't think he means to say that the top priority means that Wernher von Braun, Bob Gilruth, or Brainerd together [unknown].

David Bell: Well, that's a different question.

James Webb: But these big boosters can absorb dollars....

[Laughter.]

James Webb: It happens so fast and [too many people talking at once] and show you a very good [unknown] [too many people talking at once]. You're in the top management team here.

Unknown speaker: Goodbye, boys.

[Muffled voices as the group leaves the room and walks down the hallway.]