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Comments	Comments on a report from the Secretary of Defense and the Administrator of NASA to the Vice President pages 31-32 <i>open 5-29-80</i>	5/8/61	A
Comments	Comments on International Cooperation and the Council's proposals for cooperation in outer space Pages 53-54 <i>open 5-29-80</i>	10/24/61	A
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Narrative Section	Narrative section concerning space nuclear power Pages 119-124	Beginning with 1961	A
Narrative Material	Material concerning the Bureau of the Budget discussions on the nuclear rocket program Pages 127-128	1963	A

FILE LOCATION

Administrative History for the National Aeronautics and Space Council, Volume I

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PART II
PROGRAM DEVELOPMENT

Part II - Program
Development

PROGRAM DEVELOPMENT

Initiation of Space Acceleration

On March 22, 1961, President Kennedy called a meeting to determine action on a supplemental appropriation for the Fiscal Year 1962 NASA budget.³²

The President presided over the meeting, which was attended by Vice President Johnson and others. Discussions were held on NASA's request for a \$308-million addition to the FY 1962 Budget of \$1.109 billion.

The following questions were on the agenda:

- Increasing the rate of closure on the USSR's lead in weight-lifting capability.
- Advancing manned exploration of space beyond Project Mercury.³³

In his briefing memorandum to Vice President Johnson on the first of these subjects, Dr. Welsh pointed out that:³⁴

"A major policy issue involved in the evaluation of this budget request is -- Does this country want to make an effort to catch up to the Soviet Union in space capability. If the answer is in the affirmative, we need large rocket engines as soon as possible.

"To a considerable extent, domination of space will belong to those who can put up large manned and unmanned vehicles.

³² Oral History. Memorandum for the Vice President from Dr. Welsh, March 22, 1961, "Proposed Increase in FY 1962 Budget for NASA."

³³ Agenda for NASA BOB Conference with the President, March 22, 1961.

³⁴ Memorandum to the Vice President, March 22, 1961, "Proposed Increase in FY 1962 Budget for NASA."

"This calls for acceleration of the space vehicle and space propulsion systems." ³⁵

On the afternoon of March 23, 1961, a Bureau of the Budget staff member advised Dr. Welsh that the Budget increase to be requested by the President would amount to \$126 million, with all but \$10 million going to advanced propulsion. ³⁶

"There was no question at all that there was an inadequacy," Dr. Welsh recounted later.

"There was no question that much more needed to be done than just handling this thing through a supplemental. But the President had been persuaded, largely by his advisors, that we were not making the necessary progress in the space program, and that things needed to be done right away. And he wanted to know what was it that needed to be done right away as against what could wait until there had been a fairly thorough study of the space program and a real plan prepared for the coming year.

"It fell to my role to advise the President that there were lots of things to be done, but the main thing to be done was to stimulate the work on boosters; that we were farther behind on our propulsion side of the space program than anything else; that the big advantage the Soviets had was in the field of propulsion; and that, while we had many ideas on propulsion and many studies and many projects under way, they were moving too slowly. And so it was agreed to then that propulsion was the name of the immediate game and that other things had to be looked at (and other things were shortly thereafter)." ^{37 38}

Participating in the final meeting with President Kennedy on this subject were Vice President Johnson, Budget Director Bell, Science Advisor Wiesner, and Executive Secretary Welsh. ³⁹

³⁵ Ibid.

³⁶ \$10,000,000 was budgeted for communications satellites, as will be discussed later.

³⁷ Oral History Project, page 10.

³⁸ Ibid. page 11.

³⁹ Ibid. page 11.

The first question that the President asked was directed to the Vice President: "What is your recommendation in this regard?" And the Vice President said, "Dr. Welsh here knows more about it than I do -- let him speak." "Which," Dr. Welsh recalled, "was a very nice thing for him to say, whether it was accurate or not. So I did speak out and made the only speech . . ." The President then turned to Wiesner, who simply said that he concurred in the fact that the most important things to put additional money on right away were larger boosters and the field of propulsion. And the Director of the Bureau of the Budget simply said, "Whatever the President wants, we will try to get that done." 37a

The upshot was that on March 28, President Kennedy asked Congress for \$126-million additional for the NASA FY 1962 Budget, primarily for funds to accelerate large-booster development. 38a

The Presidential decision made it clear that this country was going to accelerate its space effort and attempt to attain leadership in the race with the USSR. 39a

The next significant step in the chain of decision-making involving Vice President Johnson and the acceleration of the space program came

37a Ibid. page 12

38a Senate Report 475 87th Congress, 1st Session

39a Letter from Dr. E. C. Welsh to N. Hillard Henson, Chief Editorial Writer, The Beaumont Enterprise, Beaumont, Texas, Dated October 9, 1961

on April 18, 1961. On that date he received a memorandum on space planning from Dr. Welsh which highlighted a discussion held at the White House on Friday evening, April 14, and attended by Sorensen, Wiesner, Bell, Webb, Dryden, Shapley, and Welsh. Among other remarks, Welsh said:⁴⁰

"The Vice President has long favored a greater effort on space. He made this clear over a number of years. He believes more should be done now."

On April 19, Vice President Johnson discussed the national space posture with President Kennedy. The results of this meeting were set forth in a memorandum for the Vice President from the President, dated April 20, 1961.⁴¹

"In accordance with our conversation," the President wrote, "I would like for you as Chairman of the Space Council to be in charge of making an overall survey of where we stand in space."

Then followed a series of difficult questions:

1. Do we have a chance of beating the Soviets by putting a laboratory in space, or by a trip around the Moon, or by a rocket to land on the Moon, or by a rocket to go to the Moon and back with a man? Is there any other space program which promises dramatic results in which we could win?
2. How much additional would it cost?
3. Are we working 24 hours a day on existing programs? If not, why not? If not, will you make recommendations to me as to how work can be speeded up?

⁴⁰ Confidential memorandum to the Vice President, April 18, 1961, "Discussion of Space Program Friday Evening, April 14."

⁴¹ Memorandum as stated.

4. In building large boosters should we put our emphasis on nuclear, (solid) chemical, or liquid fuel, or a combination of these three?
5. Are we making maximum effort? Are we achieving necessary results?

President Kennedy concluded: "I would appreciate a report on this at the earliest possible moment."

Immediately Vice President Johnson asked Dr. Welsh to set up a series of meetings to explore the problems and develop recommendations.⁴²

Beginning with April 22, 1961, Vice President Johnson chaired the resultant meetings on the goals of the U.S. space program. They were variously attended by representatives of the Congress, the general public, DOD, NASA, BOB, Science Advisor, and the National Aeronautics and Space Council staff.

In the Oral History referenced previously, Dr. Welsh explained why the Vice President invited non-governmental officials to meet with him.⁴³

"The main reason why the Vice President invited some representatives from the general public in to meet him was to get public reaction to this program. Would it get public support? I must say that the support from the representatives of the public was even stronger than that of the members representing Government. A good deal of credit has to be given to the Vice President, because he was really strongly sold on the importance of space, strongly sold on the idea that we can't stand having the Russians ahead of us in this thing. And so his leadership was felt very strong in these meetings. Some people were somewhat hesitant. Some people would raise questions about how much it would cost and things

⁴² Oral History, page 13.

⁴³ Ibid. pages 15-16.

of that sort. And he'd just come back with 'Well, would you rather be a second-rate nation and not spend quite so much money?' He showed a lot of leadership and a lot of enthusiasm."

Although no formal record was kept of these meetings, they have been characterized by Dr. Welsh as "soul-searching."⁴⁴

By April 28, the meetings concluded in a five-and-a-half page report to President Kennedy. Vice President Johnson was able to advise that the lunar project appeared to offer a real possibility that the U. S. could probably lead the Soviets, possibly by "1966 or 1967."⁴⁵

(Please pick up page 27 which is Confidential)

⁴⁴ Ibid. page 14.

⁴⁵ Ibid. page 14; also Memorandum to the President from Vice President Johnson, April 28, 1961 (Confidential).

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Summary of the Vice President's Memorandum for the President

Vice President Johnson's memorandum to the President reported the following general conclusions:

- "a. Largely due to their concentrated efforts and their earlier emphasis upon the development of large rocket engines, the Soviets are ahead of the United States in world prestige attained through impressive technological accomplishments in space.
- b. The U.S. has greater resources than the USSR for attaining space leadership but has failed to make the necessary hard decisions and to marshal those resources to achieve such leadership.
- c. This country should be realistic and recognize that other nations, regardless of their appreciation of our idealistic values, will tend to align themselves with the country which they believe will be the world leader -- the winner in the long run. Dramatic accomplishments in space are being increasingly identified as a major indicator of world leadership.
- d. The U.S. can, if it will, firm up its objectives and employ its resources with a reasonable chance of attaining world leadership in space during this decade. This will be difficult but can be made probable even recognizing the head start of the Soviets and the likelihood that they will continue to move forward with impressive successes. In certain areas, such as communications, navigation, weather, and mapping, the U.S. can and should exploit its existing advance position.
- e. If we do not make the strong effort now, the time will soon be reached when the margin of control over space and over men's minds through space accomplishments will have swung so far on the Russian side that we will not be able to catch up, let alone assume leadership.
- f. Even in those areas in which the Soviets already have the capability to be first and are likely to improve upon such capability, the United States should make aggressive efforts on the technological gains as well as the international rewards are essential steps in eventually gaining leadership (sic). The danger of long lags or outright omissions by this country is substantial in view of the possibility of great technological breakthroughs obtained from space exploration.

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g. Manned exploration of the Moon, for example, is not only an achievement with great propaganda value, but it is essential as an objective whether or not we are first in its accomplishment -- and we may be able to be first. We cannot leapfrog such accomplishments, as they are essential sources of knowledge and experience for even greater successes in space. We cannot expect the Russians to transfer the benefits of their experiences or the advantages of their capabilities to us. We must do these things ourselves. (Emphasis supplied.)

h. The American public should be given the facts as to how we stand in the space race, told of our determination to lead in that race, and advised of the importance of such leadership to our future.

i. More resources and more effort need to be put into our space program as soon as possible. We should move forward with a bold program, while at the same time taking every practical precaution for the safety of the persons actively participating in space flights."

President Kennedy's five questions were met with replies which in effect established the grand design which the United States space program was to follow during the ensuing years.

"Q.1 - Do we have a chance of beating the Soviets by putting a laboratory in space, or by a trip around the Moon, or by a rocket to land on the Moon, or by a rocket to go to the Moon and back with a man? Is there any other space program which promises dramatic results in which we could win?

"A.1 - The Soviets now have a rocket capability for putting a multi-manned laboratory into space and have already crash-landed a rocket on the Moon. They also have the booster capability of making a soft landing on the Moon with a payload of instruments, although we do not know how much preparation they have made for such a project. As for a manned trip around the Moon or a safe landing and return by a man to the Moon, neither the U.S. nor the USSR has such capability at this time, so far as we know. The Russians have had more experience with large boosters and with flights of dogs and man. Hence they might be conceded a time advantage in circumnavigation of the Moon and also in a manned trip to the Moon. However, with a strong effort, the United States could conceivably be first in those two accomplishments by 1966 or 1967.

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"There are a number of programs which the United States could pursue immediately and which promise significant world-wide advantage over the Soviets. Among these are communications satellites, meteorological and weather satellites, and navigation and mapping satellites. These are all areas in which we have already developed some competence. We have such programs and believe that the Soviets do not. Moreover, they are programs which could be made operational and effective within reasonably short periods of time and could, if properly programmed with the interests of other nations, make useful strides toward world leadership.

"Q. 2 - How much additional would it cost?

"A. 2 - To start upon an accelerated program with the aforementioned objectives clearly in mind, NASA has submitted an analysis indicating that about \$500 million would be needed for FY 1962 over and above the amount currently requested of the Congress. A program based upon NASA's analysis would, over a ten-year period, average approximately \$1 billion a year above the current estimates of the existing NASA program.

"While the Department of Defense plans to make a more detailed submission to me within a few days, the Secretary has taken the position that there is a need for a strong effort to develop a large solid-propellant booster and that his Department is interested in undertaking such a project. It was understood that this would be programmed in accord with the existing arrangement for close cooperation with NASA, which Agency is undertaking some research in this field. He estimated they would need to employ approximately \$50 million during FY 1962 for this work but that this could be financed through management of funds already requested in the FY 1962 budget. Future defense budgets would include requests for additional funding for this purpose; a preliminary estimate indicates that about \$500 million would be needed in total.

"Q. 3 - Are we working 24 hours a day on existing programs? If not, why not? If not, will you make recommendations to me as to how work can be speeded up?

"A. 3 - There is not a 24-hour-a-day work schedule on existing NASA space programs except for selected areas in Project Mercury, the Saturn-C-1 booster, the Centaur engines and the final launching phases

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of most flight missions. They advise that their schedules have been geared to the availability of facilities and financial resources, and that hence their overtime and 3-shift arrangements exist only in those activities in which there are particular bottlenecks or which are holding up operations in other parts of the programs. For example, they have a 3-shift 7-day-a-week operation in certain work at Cape Canaveral; the contractor for Project Mercury has averaged a 54-hour week and employs two or three shifts in some areas; Saturn C-1 at Huntsville is working around the clock during critical test periods, while the remaining work on this project averages a 47-hour week; the Centaur hydrogen engine is on a 3-shift basis in some portions of the contractor's plants.

"This work can be speeded up through firm decisions to go ahead faster if accompanied by additional funds needed for the acceleration.

"Q. 4 - In building large boosters should we put our emphasis on nuclear, (solid) chemical, or liquid fuel, or a combination of these three?

"A. 4 - It was the consensus that liquid, solid, and nuclear boosters should all be accelerated. This conclusion is based not only upon the necessity for back-up methods, but also because of the advantages of the different types of boosters for different missions. A program of such emphasis would meet both so-called civilian needs and defense requirements.

"Q. 5 - Are we making maximum effort? Are we achieving necessary results?

"A. 5 - We are neither making maximum effort nor achieving results necessary if this country is to reach a position of leadership."

(Please pick up page 31, which is Secret)

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Based upon the policy and technical results of these meetings, the Vice President requested the Secretary of Defense and the Administrator of NASA to prepare a funding plan with specific goals.

On May 8, 1961, the Vice President received a secret report from the Secretary of Defense and the Administrator of NASA entitled: "Recommendations for our National Space Program: Changes, Plans, Goals." "We recommend," the transmittal letter stated, "that if you concur with its contents and recommendations, it be transmitted to the President for his information and as a basis for early adoption and implementation of the revised and expanded objectives which it contains."⁴⁶

The document, some 30 pages in length, covering National Space Policy and Major National Space Goals, recommended FY 1962 add-ons of \$682 million.⁴⁷

Vice President Johnson found himself in agreement with its contents for, as he explained in his forwarding memorandum to the President, he had "conducted a series of hearings with responsible and informed representatives of the Executive, the Legislative, and the public" and "a major result of these consultations is the attached coordinated report

⁴⁶ Letter May 8, 1961, to Vice President Johnson from Webb and McNamara.

⁴⁷ Ibid.

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prepared by the Department of Defense and the National Aeronautics and Space Administration." ⁴⁸

While he was "much impressed with the thoroughness and sense of urgency reflected in this document," the Vice President stated, "our evaluation and coordination will continue." ⁴⁹

⁴⁸ Memorandum for the President from the Vice President, May 8, 1961

⁴⁹ Ibid.

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True to his pledge, Vice President Johnson actively coordinated and energized the formulation of new approaches to the national space goals.

On May 3, 1961, the Vice President chaired a meeting to refine further the plans previously outlined. This was attended by two U.S. Senators as well as Senate Committee staff, and representatives of State, DOD, NASA, BOB, Science Advisor's Office, the NASC staff, and three from the general public.

Again, no formal minutes were kept, but evidence of Vice President Johnson's leadership role is contained in a letter to the Vice President from Administrator Webb, dated May 4, 1961.

"I believe you know from what I said at the end of our meeting yesterday," Mr. Webb wrote, "that I am ready to put into execution the kind of accelerating decision which you very clearly indicated you have made or are about to make.

". . . I admire tremendously the way your driving perception takes you right to the point of the decision -- to make the commitment and go ahead.

"With deep devotion and affection as well as appreciation of your strong leadership . . ."

On May 10, there was a meeting with President Kennedy on space matters, and by May 25 he delivered a special message on "Urgent National Needs" to the Congress in joint session. In that message he stated that "with the advice of the Vice President," the space situation has been carefully examined and strong strides ahead must be made. He then asked for additional funds for

a manned lunar project, for nuclear rocket development, and for the development of communications and weather satellites. Thus, the space impact by Vice President Johnson began to be shown even more strongly.⁵⁰

Vice President Johnson's Visits to Aerospace Facilities

Although Vice President Johnson as early as April 16, 1961, had visited the Aerospace Medical Center at San Antonio, Texas, his first official trip as Chairman of the Council took place on April 16-18, 1961.

This trip was suggested by President Kennedy, who on September 30 wrote:

"I am delighted that . . . on my behalf and as Chairman of the Space Council . . . you are willing to conduct a study at first-hand of the most important installations participating in our space program. In my opinion, this is a matter of great urgency and importance."⁵¹

On-the-spot examination of major space installations was begun promptly. From October 3 to October 5, five installations were visited -- NASA Ames Research Center (Moffett Field, California), NASA Flight Research Center and Test Site (Edward Air Force Base, California), NASA Jet Propulsion Laboratory (Pasadena, California), Pacific Missile Range facilities (Vandenberg Air Force Base, California), and the Aerospace Medical Center (Brooks Field, Texas).

⁵⁰ Special Message to the Congress by the President, May 25, 1961.

⁵¹ Letter to Vice President Johnson from President Kennedy, September 20, 1961.

The Vice President's main conclusions were:

1. Real enthusiasm has been engendered by the President's clear statement of National space objectives and the financial support obtained for reaching these goals;
2. In general, available funds seem to be sufficient for what can be done during this fiscal year;
3. The largest problem arises from the difficulty of obtaining competent scientists and technicians, and particularly of retaining the best of such personnel, as private industry salary opportunities are so much greater;
4. Difficulties with the Centaur rocket program have affected adversely the schedules for some of the space projects.⁵²

Development of Space Policy

On May 9, 1962, Dr. Welsh advised the Council staff that "concurrent with our Space Council responsibilities, it is my judgment that we should draft a comprehensive statement of national space policy."⁵³

This decision was further reinforced on May 14, 1962, when Dr. Welsh was informed by Bromley Smith, Executive Secretary of the National Security Council, "that it is White House policy that all outstanding NSC policy papers inherited from the previous Administration be examined for recision, review or reconstruction."⁵⁴

⁵² Memorandum from Lyndon B. Johnson for the President, October 9, 1961, "Tour of Space Installations."

⁵³ Memorandum dated May 9, 1962, from Dr. Welsh to staff members, "Draft of Space Policy Statement."

⁵⁴ Memorandum for the Record, May 19, 1962, by Dr. Welsh, "Space Policy Statement."

Since the controlling NSC space policy paper had been approved by President Eisenhower on January 26, 1960, it seemed appropriate that "the Space Council prepare a new space policy statement."⁵⁵

Work which was already under way within the staff was accelerated, and on May 14 Dr. Welsh advised member agencies that a meeting would be held on May 17 to review a draft prepared by the Council staff.⁵⁶

Vice President Johnson was kept informed by Dr. Welsh "as soon as . . . coordination has been completed, the resulting draft will be submitted to you, with a recommendation that . . . it be taken up in the Space Council in a formal meeting."⁵⁷

Under Council staff direction, interagency meetings were held on May 16, 24, and 31, and June 9, 1962. Additional language changes were submitted in writing. Then on June 14, McGeorge Bundy, Special Assistant to the President for National Security Affairs, questioned the need for an unclassified statement of space policy.⁵⁸

⁵⁵ Ibid.

⁵⁶ Memorandum, dated May 14, 1962, "Space Policy."

⁵⁷ Memorandum for the Vice President from Dr. Welsh, May 15, 1962, "Space Policy Statement."

⁵⁸ Memorandum to Bundy from Welsh, June 14, 1962, "Proposed Policy Statement on Outer Space."

In a memorandum to Bundy on June 14 Dr. Welsh stressed the following points:

1. The public is entitled to know what the policy is, without such detail as might have security implications;
2. Fragments of policy are expressed from time to time and it is well to tie the policy into one well-coordinated package;
3. Official spokesmen of the Government have occasion to refer to and speak about our space policy, and it would be most helpful to have a uniform frame of reference for such expressions;
4. Our representatives in other countries would obtain substantial advantage from a paper which would assist them in explaining our space policy with competence and with a reasonable degree of uniformity;
5. Existing policy papers on space are out of date, not appropriate in many respects, and classified;
6. An overall policy statement will be welcomed by the Congress and will be useful for those officials who have to testify before Congressional committees;
7. It will be helpful in the preparation of responses to correspondence;
8. It will aid in the development of a desired image that we have a coordinated national space program, not a fragmented series of space projects;

9. It will help make clear that the space program is a long-range effort with planning in depth and with a broad base of anticipated benefits.

In a memorandum to Vice President Johnson, Dr. Welsh described the sequel:

"Having been advised of Mr. Bundy's interest in the policy statement and what was taking place regarding it, I sent him a memorandum outlining the reasons for preparing and issuing such a paper as an unclassified document. I further advised him that I would be pleased to discuss the matter at his convenience.

"Such discussion took place with Bundy and Kaysen a few days thereafter. Bundy expressed the view that there was some political sensitivity in the Administration regarding statements which might emphasize this country's interest in the national security aspects of space. While I agreed that overemphasis of the national security aspects was unnecessary and unwise, I suggested that I could find no justification for our pretending that there did not exist a space threat from the Soviets or attempting to conceal the fact that we have \$1.5 billion in the budget for military space. Moreover, I pointed out that I was less than impressed with any inclination or practice of withholding from the American public information regarding this country's policy and performance, which was already known to the Soviets. Bundy agreed that the question of an unclassified policy statement on space would be given further thought, and his views would be transmitted to me. After that meeting, I re-examined the policy draft, deleted certain references to national security without impairing the policy position expressed, and then made such revised draft available to Bundy on June 25, 1962. That constitutes the consultation with Bundy on this matter, to date." ⁵⁹

⁵⁹ Memorandum for the Vice President from Dr. Welsh, August 16, 1962, "Space Policy Statement."

At the Council meeting of July 12, 1962, Vice President Johnson noted that "the Council staff has been working with representatives of your respective agencies in drafting a statement concerning national space policy. This is still in progress and it is hoped that in the near future all questions of content can be resolved so that we might give attention to recommending how it might be handled."

As of July 31, Dr. Welsh was able to note in a letter to Webb:⁶⁰

"Your helpful attitude on this important matter is much appreciated. I will of course get in touch with you as soon as the question of formal concurrence arises."

But on August 30, 1962, Dr. Welsh was writing Webb quite differently. The letter is quoted in extenso because it so well illuminates the substantial differences in views held by Council members on this subject.

"Your letter opened with the following: 'Confirming our recent telephone conversation, I do not favor the issuance of an unclassified policy statement on outer space at this time.'⁶¹

"Shortly after the telephone conversation to which you referred, I had reported to the Vice President as follows: 'Administrator Webb of NASA stated on the telephone that, so far as he was concerned, he thought the draft statement was a good one; that he was not convinced it was necessary to issue the statement at this time; and that he would not object to its issuance if any other member of the Council thought it would be helpful.' That was part of a fuller report on the status of the statement.

⁶⁰ Letter of July 31 as stated.

⁶¹ Letter from Mr. Webb to Dr. Welsh, August 17, 1962.

"That report of mine also included reference to Chairman Seaborg's letter to the Vice President, in which he said that he believed such a policy statement 'will give the public in the country and the world at large a clearer understanding of the united and peaceful United States space program,' and to Under Secretary of State McGhee's letter to me to the effect that 'there is need for a comprehensive and authoritative public statement' which should be preceded as a matter of urgency by a classified policy statement.

"As you can readily understand, I find somewhat discouraging the difference between the language of your letter and my understanding of the prior telephone conversation. As you know, representatives of your staff as well as those from other agencies worked diligently with me and my staff in developing the draft paper under consideration. It would seem to me to be unfortunate to abandon this effort and I hope that you are not suggesting that in your reference to 'issuance . . . at this time.'

"In my judgment, there is substantial need for clarification of space policy and I have not grasped the reasons why the public should not have the benefits of such clarification as soon as feasible. On that basis, it would seem most practicable to re-examine and, if possible, improve upon the draft language rather than defer action altogether.

"I would hope that an opportunity would develop in the near future for us to discuss this matter so that I might have the benefit of your views as to what you think the public should be told about our space policy and what it should not be told. It would be very difficult to devise a statement which would add to the current lack of public understanding, and it should be relatively easy to develop a statement which would add to public understanding. The latter is particularly true in view of the progress already made in the draft paper."

As it turned out, the Defense Department welcomed Webb's expression of views; thus, since two of the Council member agencies did not concur in the policy statement, it was not given formal Council endorsement.

The content of the statement nevertheless was utilized by Vice President Johnson and also Dr. Welsh in public statements, articles, and speeches, and in various of the President's Annual Reports to the Congress.⁶²

"When we had a paper well agreed at the staff level," Dr. Welsh later wrote to Dr. Dryden, NASA's Deputy Administrator, "Webb advised me that he thought the time was not good and we should wait until Congress was out of session and the budget decisions had been made internally. Defense concurred in Webb's views, although they had been active . . . AEC was for having a policy paper and so was State, although the latter thought there should be both a classified and an unclassified version."⁶³

State produced a classified version by November 19, 1962. This document provided guidelines on such topics as:

- Essential elements of an overall program.
- Scope of the national research, development, and operational effort.
- Responsibility of the Government.
- Priority of the several programs which comprise the national effort.
- Assignment of responsibility for those programs.
- A regime of law for outer space.
- Arms control and disarmament measures.
- International cooperation.
- Openness in the conduct of U.S. space and space-related activities.
- Public image of the U.S. space program.
- Intelligence requirements and the public release of intelligence concerning foreign space events or failures.

⁶² Report to the Congress, United States Aeronautical and Space Activities, 1963, pages 5 and 7. (Ibid. 1967, page 7.)

⁶³ Letter, May 20, 1963.

A new attempt at producing a policy document was made by Dr. Welsh on February 18, 1963. In a letter to Council agencies he stated:

"It is now appropriate to proceed toward the drafting of a coordinated paper of a classified nature . . ."

This time resistance came most strongly from the Defense Department. NASA staff members made contributions to a coordinated classified document, but the Defense contribution was nil.⁶⁴

Hence, no further progress was made towards developing a formal policy document.

In October 1966, however, the State Department was moved to prepare a classified study on space goals which analyzed the course of action open to the United States in the post-Apollo period.

The State document, which was sent to Vice President Humphrey as Chairman of the Council on April 14, 1966, contained the caveat that "the Secretary of State believes the attached paper may be of interest to the members of the Space Council -- the Secretary reserves his own position pending decision in the Council."

Mr. Humphrey read the report "very carefully," and asked Dr. Welsh to "prepare for me an analysis of these proposals and whatever comment on rebuttal you wish to advance." For his part, the Vice President felt that while it had "some constructive suggestions, it was, however, repetitive and in many areas loosely drawn."⁶⁵

⁶⁴ Letters from Dr. Welsh to Gilpatric; April 17, 1963, to Rubel, May 20, 1963; and to Fubini, June 10, 1963.

⁶⁵ Memorandum from the Vice President to Dr. Welsh, November 25, 1966.

On the same date, Vice President Humphrey advised Secretary Rusk that he "would like to have this study to be the subject of one or more Space Council meetings." ⁶⁶

"I am sure" he added ". . . that your study will provoke a good deal of comment and undoubtedly run into considerable resistance from NASA." ⁶⁷

In accordance with the Vice President's request, the views of the Council staff were prepared and forwarded to him on December 16, 1966. Various contradictions and discrepancies in the draft document were pointed out to the Vice President, and later to State Department representatives who inquired as to its reception.

Some months later, on May 26, 1967, State Department Under Secretary Foy Kohler furnished a "revised version" to Dr. Welsh. This was circulated to Council members by memorandum of August 2, 1967, in accordance with the Vice President's "wish . . . that all members . . . be informed of the considered views contained in this paper." There is no record of any further Council action on this document.

President Kennedy's Five Questions

On April 9, 1963, President Kennedy sent Vice President Johnson a memorandum in which he said: "I feel the need to obtain a clearer understanding of a number of factual and policy issues relating to the national

⁶⁶ Letter to Secretary Rusk from the Vice President, November 25, 1966.

⁶⁷ Ibid.

space program." He asked that "the Space Council give consideration and replies." ⁶⁸

The questions covered "the salient differences between NASA plans as projected on January 1, 1961, . . . and the NASA program redefined by the present Administrator," the principal benefits expected to accrue from the augmented program, the effect of diversion of talent from the research and development on the industrial and consumer sectors of the economy, and the like. A reply was requested by May 15, 1963. ⁶⁹

By May 6, contributions to a response were received from NASA (63 pages), DOD (8 pages), State (3 pages), and AEC (3 pages).

"With staff assistance," Dr. Welsh advised Vice President Johnson, "I have compressed the answers into 7 and a fraction pages . . . a 90% reduction."

The reply to the President was considered at a Council meeting on May 7 chaired by Vice President Johnson, concurred in by all members and the Executive Secretary, and dispatched to the President by the Vice President.

⁶⁸ Memorandum for the Vice President from the President, April 9, 1963.

⁶⁹ Ibid.

Astronaut Selection and Training

As Chairman of the National Aeronautics and Space Council, Vice President Johnson took a leading part in broadening the source of astronauts, particularly with respect to including representatives from minority groups. ⁷⁰

The problem came to his attention when President Kennedy, on June 11, 1962, sent him a note expressing the "hope that something might be done" to place a Negro in training as an astronaut.

"The Vice President," wrote Dr. Welsh, "took the position that the proposal merited serious consideration, that non-qualified astronauts should not be forced into the program, and that action should be taken to see if Negroes and Orientals could be worked into the test-pilot program of the Navy and the Air Force." ⁷¹

Subsequently, following Vice President Johnson's advice, Dr. Welsh discussed the problem with NASA Administrator Webb, Secretary Korth of the Navy, and Secretary Zuckert of the Air Force. Both service secretaries promised to cooperate. ⁷²

The matter was further discussed at the Council meeting of July 12, 1962, when Vice President Johnson requested Dr. Welsh to "report on the question of introducing non-Caucasians into the astronaut training program." ⁷³

⁷⁰ Memorandum for the Record, June 14, 1962, by Dr. Welsh, "Astronaut Training."

⁷¹ Ibid.

⁷² Ibid.

⁷³ Opening statement of the Vice President, NASC meeting, July 12, 1962; statement by Dr. Welsh, "Astronaut Training," same meeting.

Bioastronautics

A significant example of beneficial interaction between the Council staff and that of the President's Special Assistant for Science and Technology occurred in 1961, when Dr. Welsh and Dr. Jerome Wiesner agreed on the urgency of national needs in bioastronautics.

In a memorandum for Dr. Wiesner dated June 28, 1961, "A National Life Sciences Program for Space Exploration," Dr. Welsh wrote:

"The recent announcement by the President of an expanded and accelerated program in manned exploration of outer space makes it clear that our country must develop a strong life science program in support of the space effort.

"Although we are limited by today's technology to manned space flights of a few hours' duration, the capability will soon be available for extended flight times, and within this decade for lunar landing and return of multi-manned spacecraft. This evolution will require not only the solution of many engineering problems, but will require a truly national life science effort to provide the biomedical support for the manned flights as well as a broadly based research and education program to develop the sciences.

"In view of these needs, it would be very helpful to the Space Council if you would undertake a study of the national capabilities and potentials for life science related to space activities within the several Federal agencies, the nation's universities, and industrial organizations. Based upon such information, it would be particularly helpful to have your recommendations as to what needs to be done to obtain an integrated and more effective Life Sciences Program."

As a result, the President's Science Advisory Committee appointed a Life Sciences Panel to report on the problem. Meetings were held on October 2 and 3, and a report was forthcoming on February 15, 1962.

The panel recommended that:

1. NASA appoint a national leader in biomedical science as a deputy associate administrator for the life sciences or as a special assistant to the associate administrator.
2. NASA and DOD devise, without further delay, a mutually acceptable mechanism for effective use of DOD biomedical personnel and facilities in the conduct of Projects Gemini and Apollo.
3. NASA request AEC to assume primary responsibility for assessment of the biological radiation hazard in space, including determination of shielding requirements for space vehicles.
4. NASA and the DOD take aggressive and comprehensive measures to build up national biomedical competence in fields essential to a long-range program.
5. The National Aeronautics and Space Council appoint a widely respected biomedical scientist to its staff.

On March 30, 1962, Dr. Welsh called together representatives of Defense, State, NASA, AEC, and Wiesner's office to examine and discuss the panel's report.

In opening that meeting, Dr. Welsh summarized the panel's findings that there was substantial competence in Defense, specialized competence in AEC, minimum competence in NASA, and unused competence in industry, universities, and friendly foreign countries. Notice was also given to the panel's finding that there was inadequate distribution and use of available bioastronautics information and a lack of space-oriented education in our universities. The panel's recommendations were also reviewed.

Representatives of each agency were asked to express views on the panel's report and any other views they considered appropriate.

The outcome seemed to satisfy all participants. The net results were:

1. General concurrence as to the facts in the panel report.
2. Notice that Defense and NASA were trying to work out a mutually advantageous arrangement for the use of personnel and facilities.
3. Stimulation of an atmosphere of interagency cooperation.
4. Agreement that no agency was trying to take over or duplicate any functions of any other agency, and that questions of priorities in expanding facilities would be brought to the Council's attention, if they could not be ironed out between the agencies concerned.

5. Announcement that the Council staff would follow up with individual agencies as to progress in this cooperation.⁷⁴

Project West Ford

Project West Ford, an experiment in communications performed by the Lincoln Laboratory of M.I. T. for the United States Government, had as its purpose the placing into orbit of 35 kilograms of copper dipoles in a belt about the Earth in order to determine the technical feasibility of using such a belt for long-distance communications.⁷⁵

The project aroused fears in some scientific circles that it would interfere with sensitive astronomical observations. It was deemed desirable to have an official policy statement from the U.S. Government. Dr. Wiesner asked the Council to consider the development of a policy position.⁷⁶

Dr. Welsh arranged for an interagency meeting to be held under his chairmanship on August 1 and 3, 1961, and a draft policy statement was ready to be sent to Vice President Johnson by August 7.⁷⁷

Vice President Johnson approved the document on August 9, and approval of President Kennedy was forthcoming on August 11, 1961.

⁷⁴ Memorandum for the Vice President, April 2, 1962, from Dr. Welsh, "Bioastronautics."

⁷⁵ Letter to Dr. Welsh from Dr. Wiesner, July 24, 1961.

⁷⁶ Ibid.

⁷⁷ Memorandum for the Vice President from Dr. Welsh, August 7, 1961, "Project West Ford."

An interagency follow-up meeting, chaired by Dr. Welsh, was held on August 22, 1963, to review the success of the venture.

Limits of Air Space and Outer Space

The question of defining a boundary between air space and outer space was referred to the Council by the State Department on October 17, 1961, and accepted as a problem for Council staff adjudication on October 31, 1961.

Included in the interagency group were the Department of Justice, FAA, and USIA, in addition to the representatives of the Council members. On December 12, Dr. Welsh presided at an interagency meeting.

At that time, the following conclusions were reached:⁷⁸

"That it would be in the interest of the U.S. to study the legal limits of air space and outer space, based upon the respective missions of the interested agencies. Such analyses would then be available to bolster any later preparation of a U.S. position on this subject as well as to assist in the evaluation of proposals from other nations.

"That each of the agencies with primary missions involving air space and outer space should analyze the foreseeable consequences to current and future missions which might arise from the establishment of an outward limit of sovereignty. Each such analysis should bring out the merits and demerits of setting limits at 20 (or less), 25, 50, and 100 (or more) miles.

"That at this stage, attention should be focused on the relationship between boundaries and missions. In the light of these studies, determination might subsequently be made on: (1) the advisability of having the United States propose a limit; (2) the negotiability of various limits; (3) the most useful tactics to be employed if a limit is proposed by some other nation.

⁷⁸ Summary Statement, December 15, 1961, Limits of Air Space and Outer Space.

"That there is general agreement that the best boundary, from the point of view of the United States, cannot be determined primarily on the basis of technological criteria involving physical or aerodynamic distinctions. In making these studies it was suggested, therefore, that primary attention not be given to defining the limits in terms of the physical characteristics of the aerospace environment."

Vice President Johnson was advised by Dr. Welsh on December 15, 1961,⁷⁹ that an approach had been agreed to by participating agencies, with each agency making a separate study based on its respective missions and responsibilities. When completed, such studies would be jointly re-examined.⁸⁰

Reports were requested by February 10, 1962; when received, they were summarized in a Council staff document dated May 14, 1962.

These studies showed that NASA, Defense, and AEC were interested in a regime of free outer space extending as low as 20-25 miles. FAA envisaged extending positive air control well beyond this region -- to a 10-mile minimum for obligation by aircraft.

As a result, the consensus was that definition of boundaries was not necessary or desirable at the time.⁸¹

The problem continued to be examined from time to time by the Council staff. At an interagency meeting, chaired by Dr. Welsh, on April 25, 1967,

⁷⁹ Memorandum as stated.

⁸⁰ Letters from Dr. Welsh to Defense, NASA, FAA December 15, 1961.

⁸¹ Memorandum for the Vice President from Dr. Welsh, March 29, 1967, "Air Space vs. Outer Space."

it was agreed that "while the problem would continue to be studied, the interests of the United States do not require any further definition of the characteristics of air space or outer space at this time."⁸²

The problem was again reviewed by the Council staff in May 1968, when the State Department furnished for review a position paper on air space/outer space boundary to be used by the U.S. delegation to the UN Outer Space Legal Subcommittee meeting in Geneva. In his reply, Dr. Welsh highlighted the dilemma confronting the U.S.:

"As you know, the Space Council has been interested in this subject since 1962 and has reviewed the subject on numerous occasions. At each instance, the weight of opinion at the Council has been to sustain the view that while the problem of defining the air space/outer space boundary should continue to be studied, the interests of the United States do not yet require definition of the characteristics of either the air or space regimes in any precise detail.

"This stems primarily from the fact that the space missions of NASA and the Defense Department require that the limit of air space be established at the lowest possible level in order to provide free access to orbiting or returning spacecraft. At the same time, the regulatory interests of FAA require that the limit of air space be extended into higher boundaries in the interest of air safety and traffic control, as well as reciprocity with other nations with respect to commercial air rights."

(Please pick up page 53 which is Confidential)

⁸² Highlights of Interagency Meeting, April 25, 1967.

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FORM OF DOCUMENT	CORRESPONDENTS OR TITLE	DATE	RESTRICTION
Comments	Comments on International Cooperation and the Council's proposals for cooperation in outer space pages 53-54 <i>Open 5-29-80</i>	10/24/61	A

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International Cooperation

The Council became involved in developing proposals for cooperation in outer space with the USSR as early as October 24, 1961. On that date, in a letter to the Special Assistant to the Secretary of State, Dr. Welsh pointed out:

"I have some reservations about urging the Soviets to put up communication satellites, as we want to be first with an operational system if at all possible. While I doubt that they would be interested in developing anything that might come close to a global system, they might want to put up a couple of satellites in order to show the world that they could do it first.

"Their closed or security-controlled system hampers efforts to attain cooperation between the U.S. and the USSR on space projects. However, a multi-part proposal might be worth consideration. Obviously, the most appropriate arena for international proposals on matters of space is the United Nations. On the other hand, all avenues which might lead to greater cooperation should be explored, even if they are initiated as bilateral agreements.

"A proposal on space could include the following:

- "1. Procedures for prompt exchange of scientific information obtained from space exploration;
- "2. Cooperative effort to activate a unit in the UN for receipt, codification, and dissemination of information as to space launches;
- "3. Joint participation in a global space weather system, through establishment and coordination of ground stations, etc., as well as through coordinated weather reporting;
- "4. Arrangements to foster cooperation in the allocation of frequencies, through the I.T.U., so that a communications satellite system can be usefully operable and grow to one giving maximum service world-wide;

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- "5. Improvement in the exchange of satellite tracking information;
- "6. Joint scientific exploration launches from our launching sites, in which each nation puts some scientific equipment in the payload;
- "7. Exchange of astronauts and cosmonauts for exposure to our respective biomedical testing facilities.⁸³

⁸³ Letter to Farley from Dr. Welsh, October 24, 1961.

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Also on March 2, 1962, National Security Action Memorandum 129, assigning responsibilities for developing cooperative programs, was revised at the request of Vice President Johnson "to record the President's desire that the Executive Secretary of the National Aeronautics and Space Council participate . . ." ⁸⁴

Vice President Johnson kept close personal touch, and the record shows that he was to be briefed on developments at 8:30 a.m. on March 6. ^{84a}

Vice President Johnson was also informed in detail of the discussions between NASA Deputy Administrator, Dr. Hugh L. Dryden, and Chairman Blagonravov of the USSR Academy of Sciences by Dr. Welsh's memorandum of June 16, 1962.

Consultations with NASA and State were held intermittently, and on December 6, 1963, Dr. Welsh furnished NASA with Council staff views on cooperation in lunar exploration. ⁸⁵

(Please pick up page 56 which is Confidential)

⁸⁴ Memorandum to the Vice President, March 2, 1962.

^{84a} Memorandum for the Record, March 5, 1962, "U.S.-USSR Cooperation in Space Exploration."

⁸⁵ Letter from Dr. E. C. Welsh to Mr. Arnold Frutkin, Assistant Administrator for International Affairs - NASA, December 6, 1963.

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FORM OF DOCUMENT	CORRESPONDENTS OR TITLE	DATE	RESTRICTION
Comments	Comments from Dr. Walsh on cooperation in space 12/5/63 pages 56-57 <i>Opened 5-29-80</i>		A

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"The key issue," wrote Dr. Welsh, "which should be clarified for the Congress, the Executive Branch, and the general public is whether cooperative measures with the USSR will in any way inhibit the early acquisition by the United States of an independent manned lunar landing capability or compromise our national security. Therefore, the plan should envisage early public announcement that such U.S. capability will not be impaired or delayed by any cooperative measure which might be contemplated and that our national security interests will be fully protected.

"The background on recent negotiations with the Soviets might note Soviet willingness to negotiate legal issues on outer space along lines generally sought by the United States, as well as the Soviet agreement at the recently concluded I.T.U. meeting to allocate space communications which the United States considered the most technically desirable of the remaining available frequencies. The nuclear test ban negotiations and agreement offer an example of the rapid breakthrough in a position which had been repeatedly maintained for over half a decade. Planning therefore must proceed on the assumption that Soviet tactics and strategy are capable of a departure from long-held positions.

"The listing of low-risk confidence-building measures might also include some consideration of the feasibility of mutual allocation of payload space for small scientific 'piggy-back' experiments to explore the lunar environment. Additionally, a search for measures of cooperation might include standardization of astronaut rescue capability, including docking attachments, capsule atmosphere, and emergency communication frequencies. Consideration might also be given to a space program personnel exchange program as part of our ongoing scientific and technical exchange program.

"The desirability of placing any U.S. -Soviet bilateral lunar efforts in the context of a broader international effort might also be examined. This might be accomplished by setting as a long-range goal the establishment of meaningful cooperation in the realm of interplanetary missions. This has the merit of being near enough in time to be reasonable and yet sufficiently demanding in scope so that plans are not yet fully developed by either side.

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"Additionally it might be useful to draw a distinction between cooperative measures aimed at delaying technological advance (e.g. arms control) and cooperation aimed at furthering technological advance (e.g. space developments).

"The step-by-step confidence-building approach which you have so ably outlined in the latter portion should of course be retained in any succeeding versions.

"We will be interested in following this paper during the next phase of its development, and members of my staff will be available to further explore with you the merit of any specific suggestions."

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In addition to the foregoing, the Council directly and through its staff engaged in the following activities in the area of international cooperation:

- a. Assisted in the preparation of a U.S. resolution, introduced in the United Nations, on the peaceful uses of outer space, and participated in the development of U.S. positions on space for the 17th General Assembly.⁸⁶
- b. Participated in the development of United States positions with respect to bilateral arrangements with the Soviet Union in the field of weather, communications, and geomagnetic satellites.⁸⁷
- c. Developed comparisons between U.S. and USSR space activities, and reviewed space accomplishments and potentials of other nations.⁸⁸
- d. Contributed to the planning of foreign visits for U.S. astronauts.⁸⁹
- e. Gave assistance and encouragement to the development of the United Nations Space Treaty, from its initiation to its successful conclusion.⁹⁰

At the Council meeting of April 13, 1965, Vice President Humphrey made international cooperation the major subject of discussion.⁹¹

At the conclusion of the meeting, the following questions were circulated by the Executive Secretary for response by member agencies:

⁸⁶ Annual Report 1962, page 8.

⁸⁷ Annual Report 1963, page 6.

⁸⁸ Ibid., page 7.

⁸⁹ Annual Report 1965, page 7.

⁹⁰ Annual Report 1966, page 8.

⁹¹ Summary of Meeting, April 13, 1965.

1. What have overseas public opinion polls shown regarding the relative standing of the United States and the Soviet Union in space activities? Have you any suggestions for improving this standing?
2. What should be done to enhance international cooperation with friendly countries in the space effort? Are we doing all that can be done effectively?
3. What, if anything, should be done to increase cooperation with the Soviet Union in the space effort?
4. What have West European space organizations, such as ESRO and ELDO, done to increase cooperation with the United States?
5. What has the United States policy been regarding the release of information about our space program and about the Soviet space activities? What should be done to improve or clarify this policy?
6. How effective have NASA exhibits been in increasing understanding of our space program abroad? What are the plans for improving this part of the program?
7. What should be done to improve foreign understanding of the nature of our military space programs?
8. What space programs should be emphasized in our current planning so that the United States does attain and maintain a world leadership position in the future?

Replies were received, assembled, and recirculated to members on May 5, 1965, under Secret classification to conform with the Defense submission.

On March 23, 1966, at a Council meeting, the Vice President appointed a working group to examine our international cooperation in space and report to the Council its recommendations for expanding such cooperation. Representatives from NASA, DOD, AEC, ACDA, NSC, OST, OTM, and NASC

were designated members of the Working Group under the Chairmanship of a representative of the State Department.⁹²

This Working Group met periodically throughout 1966, reviewing all of NASA's programs and plans, and all of the Defense programs and plans.

On February 28, 1967, the State Department drafted a report to the Council and submitted it to Working Group members, who were asked to obtain their agency comments on the draft. Dr. Welsh commented by memorandum dated March 20, 1967, to Robert Packard of the State Department (Executive Secretary of the Working Group). Dr. Welsh sent a copy of his memorandum to Colonel Paffel, the Vice President's military aide, March 22, noting his dissatisfaction with the report. The Vice President saw the memorandum to Packard and wrote Dr. Welsh on March 25 that he agreed with it. Subsequently, Dr. Welsh met with members of the staff of the State Department. During this meeting in Dr. Welsh's office, he pointed out the several ways in which the draft report failed to meet the objectives of the Vice President and the Council.

Subsequently, on May 12, 1967, a revised draft report was submitted for agency clearance. In this draft most of the recommendations for change made by Dr. Welsh were incorporated.

⁹² Memorandum for the Record, June 6, 1968, "Working Group on International Cooperation in Space."

The final report, dated June 16, 1967, was transmitted to the Vice President in a memorandum signed by Foy Kohler, Deputy Under Secretary of State.

Dr. Welsh's comments on the State draft offer an insight into the workings of the bureaucratic staff process. These documents are the memorandum for Packard, Department of State, March 20, 1967, and the memorandum for the Vice President, June 21, 1967, "Interagency Report on International Cooperation." (Confidential).

Communications Satellites

The first National Aeronautics and Space Council staff action with respect to communications satellites took place on March 23, 1961.

Dr. Welsh's summary observations about these events follow :

"The first point at which I got into the picture was back in March of 1961 when the question of the supplemental for the '62 fiscal year budget came up, and one little item in there was a \$10-million figure which President Kennedy put in to offset a \$10-million anticipated investment in communications satellites by a private company in the United States.

"In other words, part of the Eisenhower program was to rely upon the largest company in communications in the United States to invest its own money in communications satellites and, therefore, not have the Government continue with the research and development, at the same pace at least. This, President Kennedy, on our recommendations (when I say 'our' I'm meaning everybody who was involved in it -- Mr. Webb and the Vice President and so forth), recommended that the \$10-million be put in the Government budget and we will decide when we see what the situation is whether we will rely upon a private company or whether we will have the Government do the thing.

"So the issue of what was to be done on communications satellites came up a little bit even back as far as March of 1961."⁹³

Then, on April 17, 1961, Secretary of Defense McNamara sent Dr. Welsh a confidential study entitled "United States Policy Towards Satellite-Based Telecommunications."

"I am sure you share with me," he wrote, "a sense of urgency that the United States move without delay, using all appropriate sources of

⁹³ Oral History, pages 27-28.

government and industry to place into early operation a satellite-based telecommunications system."

McNamara's April 17 memorandum also made the following pertinent statement: "A revitalized Space Council may well be the focal point for the resolution of U. S. policy toward satellite-based telecommunications . . . There is no coordination, nor has there been an interdepartmental policy statement developed, or started in development on the delineation of 'military' and 'civilian' interests in the operational field."

(Please pick up page 64, which is Confidential.)

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From the Defense view the major policy matters which had to be dealt with were:

- a. Determination of the "military" as distinguished from the "civilian" interest in satellite-based telecommunications.
- b. Determination of the degree to which "military" satellite-based telecommunications requirements can be met by a "civilian" system.
- c. Determination of the manner in which the U. S. Government, and the Department of Defense in particular, should relate itself to the efforts of private industry to establish satellite-based telecommunications systems.
- d. Allocation of frequencies for satellite-based telecommunications for both military and civilian use. This "technical" subject has major policy aspects.⁹⁴

⁹⁴ Memorandum, as stated.

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The next initiative to involve the Council in this field came from the State Department. On April 24, Deputy Assistant Secretary for International Organization Affairs (Gardner) wrote Vice President Johnson that he considered space communications "to offer the greatest promise" in capturing the space initiative from the USSR.⁹⁵

Vice President Johnson asked Dr. Welsh to discuss Assistant Secretary Gardner's views.⁹⁶

Vice President Johnson and Dr. Welsh, involved as they were in developing the policy basis for an accelerated space program as indicated earlier in these pages, were fully cognizant of the importance of communications satellites in the U. S. national space posture.

Thus, in memoranda to the Director of the Bureau of the Budget, dated May 18 and 19, Dr. Welsh recommended that funds be provided for accelerating the use of space satellites for world-wide communications, and President Kennedy in his message of May 25, 1961, requested an additional \$50-million for this purpose.⁹⁷

On May 31, State Department officials advised the Council staff that they were deeply concerned over foreign relation aspects of the then current program, and had reason to question "whether the announced plans in the

⁹⁵ As cited.

⁹⁶ Letter from Dr. Welsh to Mr. Gardner, May 1, 1961.

⁹⁷ Memoranda, as stated.

field are in the best interests of the U. S. , are legal in the views of the Justice Department, and will allow for needed international participation."⁹⁸

On June 3, Dr. Welsh wrote to Administrator Webb pointing out that policy in regard to communications satellites is the subject of some confusion and varying opinions among interested agencies of the Government, and suggested that "it would be wise for the interested agencies, including my office, to be brought up to date on what policy decisions have been made, what have not been made, and whether there are any areas of responsibility as yet not clarified."

On June 5, Dr. Welsh sent a memorandum to the Director of the Bureau of the Budget stating:

"It is my belief, based upon preliminary investigation, that coordination leading to policy decisions in this field is needed. Certainly, national policy needs to be formulated and clearly stated. I plan to suggest to the Vice President that this be considered promptly, either through formal Council consideration or through the informal-type of procedure employed in the development of the over-all space program.

"I suggest, therefore, that it would seem inadvisable for any budget justification or testimony to make reference to a policy of private participation, as yet undetermined.

"Mr. Shapley's informative memorandum to you, dated May 11, 1961, brings out evidence of non-agreement within the Government on certain aspects of this problem. The Department of State also has viewpoints which need to be weighed into a policy decision."⁹⁹

⁹⁸ Memorandum for Dr. Welsh from R. W. Hale, June 1961, "Communications Satellites."

⁹⁹ Memorandum from Dr. Welsh to the Director, Bureau of the Budget, June 5, 1961.

On June 5, Dr. Welsh advised Vice President Johnson that "it is still apparent that no coordinated national policy has been firmed as to how and by whom communications satellite systems will be operated." Dr. Welsh then recommended: "I believe you should call a Council meeting or an informal meeting such as you held on the over-all space program. In order to make your intentions clear, it might be well to send a notice to the Council members stating that you plan to call a meeting in the near future to clarify policy questions involved in the communications satellite program and that you would like them to be prepared to identify all policy questions they may have and be prepared to make recommendations regarding each such question."¹⁰⁰

Vice President Johnson not only heartily endorsed the idea of vigorous Council leadership but requested that Administrator Webb provide him with answers to the earlier memorandum sent by Dr. Welsh on June 3.¹⁰¹

When inquiry was duly made of Mr. Webb on this matter, Mr. Webb said, "he is proceeding in accordance with instructions received by letter from the President . . . that he had been assigned the responsibility of coordination, that everything was proceeding satisfactorily, and that he actually had Mr. McNamara's proxy in this matter."¹⁰²

¹⁰⁰Memorandum, as stated.

¹⁰¹Memorandum to the Vice President from R. W. Hale, June 6, 1961, "U. S. Policy on Communications Satelites."

¹⁰²Ibid.

By this time it was beginning to be abundantly clear that there were, as Dr. Welsh pointed out, "evidences of non-agreement within the Government on certain aspects of this problem."¹⁰³

On June 7, there was a White House luncheon meeting chaired by Dutton of the President's staff and attended by Wiesner, Minow (FCC), Farley (State), and Hale of the Council staff.

Dutton dealt specifically with the "coordination" role claimed by Administrator Webb in his June 6 conversation with Hale. "Mr. Dutton said that the President had not assigned responsibility for coordinating policy to anyone, and that the President sent identical letters to Messrs. Webb and Minow to assure cooperation between them."¹⁰⁴

"It was suggested," the memorandum went on "that these issues be examined by the Space Council."

Vice President Johnson, in keeping with his custom of seeking advice from the widest range of knowledgeable people, suggested that letters be sent by Dr. Welsh to Harold S. Geneen, President of International Telephone and Telegraph Corporation; Frederick R. Kappel, President of American Telephone and Telegraph Company; Dr. John R. Pierce, Director of Research-Communication Principles, Bell Telephone Laboratories; David Sarnoff,

¹⁰³ Ibid.

¹⁰⁴ Memorandum for the Vice President from R. W. Hale, June 7, 1961.

Chairman of the Board, Radio Corporation of America; Frank Stanton, President of Columbia Broadcasting System; Dr. Edward Teller, Professor of Physics, University of California; Dr. Wernher von Braun, Director of George C. Marshall Space Flight Center; and Max Freedman, The Manchester Guardian, inviting them to "explore the ultimate" in communications and broadcast and to send a memorandum to him "in a week or so."¹⁰⁵

On June 9, there was also a meeting of department and agency representatives, chaired by Hale of the Council staff to "obtain informal staff memoranda on various policy questions and related issues in the field of communications satellites and to explore ways and means of bringing the relevant questions before the Council, particularly in view of interests which had already been expressed by the President and the Vice President."¹⁰⁶

It was made evident at the meeting that the State Department felt the keenest pressures for authoritative policy guidelines.¹⁰⁷

The State Department representative pointed out that a high-level policy statement of national objectives in the area of space communications satellites was required so that the FCC could be guided in its current consideration of industry requests for allocation of frequencies for privately owned space communications systems. Piecemeal statements by U. S. officials were

¹⁰⁵ Letters from Dr. Welsh to addressees, June 9, 1961.

¹⁰⁶ Memorandum of meeting, June 9, 1961, NASC file.

¹⁰⁷ Ibid.

presenting a confusing pattern abroad and the Department was finding it difficult to talk to other Governments about our program. He pointed out that a Vice Presidential or Presidential statement about what we are doing and where we are going would be desirable in advance of a possible announcement by the British, French, and West Germans that they planned to develop jointly a communications satellite program using the British Blue Streak as a launching vehicle.

State was particularly concerned lest the current FCC action result in the approval of a system which might be available at an early date but might not be the best system in the long run. Within the Department, one view was that an international organization should be established to operate the space aspects of the system. A second view was that while an international organization was desirable as an ultimate objective, it was not feasible to establish such an organization at the outset. Details of how the U. S. companies might participate in such an international organization had not yet been worked out, but nothing was contemplated by State which would eliminate private enterprise from such participation. State also felt that if the selection of a system was based on economic criteria alone, it might not be the best system for over-all national needs.

With respect to the meeting of the I. T. U. , upcoming in 1963, State wanted to have an orderly plan for the U. S. Government to develop satellite communications systems in hand before it attempted to win over individual

I. T. U. members to support the U. S. approach. It was certain that European countries would expect to participate in the ownership of such a system. The Soviets were certain to raise questions concerning any U. S. proposal, and the U. S. could expect to deal with Soviet resistance only if it had an orderly, agreed approach to the problem.

The policy coordination problem was clearly of major dimensions, and efforts were directed towards drafting a Presidential policy statement of U. S. objectives in this field.¹⁰⁸

After a one and one-half hour discussion in which there was general agreement that policy determinations were needed, Dr. Welsh reported to Vice President Johnson.¹⁰⁹

"It was decided that all agencies would contribute suggestions . . . "¹¹⁰

While the basic issues were being refined and redefined, the White House staff members were drafting a letter from President Kennedy to Vice President Johnson asking him to take charge of a Government-wide policy study. Dr. Welsh suggested a few language changes.¹¹¹

On June 15, President Kennedy's letter to Vice President Johnson was dispatched. "Dear Lyndon," it read, "I will appreciate your having the

¹⁰⁸ Highlights of meeting, June 12, 1961, concerning communications satellites dated June 13, 1961, NASC files.

¹⁰⁹ Memorandum to the Vice President from Dr. Welsh, June 19, 1961, "Recent Chronology re Communications Satellite Program."

¹¹⁰ Ibid.

¹¹¹ Memorandum for Dutton from Dr. Welsh, June 13, 1961.

Space Council undertake to make the necessary studies and Government-wide policy recommendations for bringing into optimum use at the earliest practicable time operational communications satellites."

With the ball now so clearly in the Council court, little time was wasted in seeing to it that a policy statement was expeditiously produced.

On June 28, Dr. Welsh chaired an interagency meeting on communications policy, and pointed out that under the President's instructions the highest priority would be given to those factors which would support and enhance the public interest.¹¹²

The group was advised that Vice President Johnson was planning on a Council meeting during the week of July 3, and an accelerated schedule of meetings was prepared.¹¹³

Meetings chaired by Dr. Welsh were held on June 28 and July 5. The latter session was noteworthy in that it lasted from 3 p.m. until 8 p.m., to "review a draft statement of policy dated July 3, which had been prepared by the Chairman (Welsh) and which reflected previous discussions and submissions of the individual departments and agencies."¹¹⁴

The meetings were conducted with the understanding that agency representatives were not expected to extend department approval, but were to

¹¹² Highlights of meeting, June 27/28, 1961.

¹¹³ Ibid.

¹¹⁴ Highlights of meeting, July 5, 1961.

concur in the content of the paper as a document for Council consideration.¹¹⁵

In both meetings substantial issues were dealt with. These are summarized in Dr. Welsh's memorandum to Vice President Johnson, June 30, 1961, in which he pointed out that:

" . . . agreement has already been attained regarding many of the major points which need to be covered in a policy statement. Some of the major items which have prompted discussion have been policy questions regarding foreign participation, global coverage, access to and use of the system, ownership and operation, the role of the UN, and whether there should be one system or two systems.

"It has been made clear throughout our deliberations that research and development efforts are to be accelerated (and) the time and attention given this study should in no way delay any such activity. Moreover, we have been assured that the examination and evaluation of private company proposals before the FCC, as well as the questions that need to be ironed out between FCC and Justice, are not being delayed or interfered with.

"As you may know, the Justice Department has taken the policy position that all communications common carriers should have an opportunity for ownership and unrestricted use of the system and that all equipment companies should have equal opportunity to furnish equipment and to engage in ownership of the system. The FCC, on the other hand, has indicated that it favored competition among the equipment companies and that it opposed domination of the ownership of the system by any one company, but felt it was more practicable to limit the actual ownership to international communications common carriers. In our discussions, we have gotten some agreement between representatives of these two agencies as to general principles."

As a result of these negotiations, agreement was reached on a draft statement on July 6, with final revisions July 7 and transmittal to Council members July 8.¹¹⁶

¹¹⁵ Ibid.

¹¹⁶ Chronology, op. cit.

Council action took place on July 14, 1961. Vice President Johnson chaired the meeting which took place in the Fish Room in the White House.

"Because of the nature of the subject," Dr. Welsh explained, "those attending the Council meeting included not only the members of the Council but the Attorney General, the Chairman of the FCC, and the Deputy Administrator of the OEP. The paper was gone over word for word in the meeting, minor modifications were made, and (it) was approved unanimously. The Vice President then asked me to transmit it to the President. Consequently, I did formally transmit on July 15 such policy recommendation in the field of communications satellites."¹¹⁷

As recommended by the Council, the President's statement of policy was released as a public document on July 24, 1961.¹¹⁸

Patent Aspects of Communications Satellites

The next major problem area to be considered under the aegis of the Council during Vice President Johnson's chairmanship was the patent aspect of communications satellites.

In a letter to Dr. Welsh dated July 11, 1961, Attorney General Kennedy had pointed out that "there is no statute which presently controls the disposition of title to all inventions arising out of research and development in the

¹¹⁷ Oral History, page 29. Minutes of Meeting, July 14, 1961, NASC. Press Release by the Vice President, July 17, 1964, and Memorandum for the President from Dr. Welsh, "Communications Satellite Policy Recommendations."

¹¹⁸ White House Press Release, July 24, 1961.

communications satellite field," and suggested that "this is a matter which should properly be considered by the National Aeronautics and Space Council."¹¹⁹

Dr. Welsh, in replying by letter on July 13, stated: "I agree that this is a matter which should be examined promptly, particularly as there is non-uniformity and, hence, some diverse policy in the Government at the present time. It is planned that we set up a staff, drawn from the agencies most directly concerned with the communications satellite program, so as to undertake the study such as you suggest, as well as to give continuing observation to the implementation of all aspects of this program."

As a matter of record, Vice President Johnson, at the Council meeting of July 14, "referred to a proposal from the Attorney General that the Council look into disposition of title to inventions arising out of research and development in the communications satellite field" and "requested that the Executive Secretary give priority to this proposal."¹²⁰

The Justice Department continued to indicate its concern in this area, and on July 20 Dr. Welsh was advised by telephone "that there were questions regarding the appropriateness of the patent provisions in the contract currently being worked out by NASA and AT&T."¹²¹

¹¹⁹Letter, as referenced.

¹²⁰Letters from Dr. Welsh to the General Counsels of NASA, Defense, and AEC, July 27, 1961.

¹²¹Memorandum for the Record by Dr. Welsh, July 20, 1961.

The patent question involved deeply felt, long-maintained views both within and without the Government. Suffice it to say that the defenders of a lenient policy and the proponents of a restricted policy clashed just as intensely when dealing with communications satellites as they had when dealing with any other aspect of the patent rights stemming from Government-sponsored research and development, be it armaments or antihistamines.

Insofar as the Space Act was concerned, legislative compromise had resulted in a situation which vested patent rights in the Government but permitted the Administrator of NASA to waive such rights if he deemed it in the public interest.¹²²

The objective of the Council effort was to obtain greater uniformity in patent language, particularly in the defense field, where in practice little or no effort was made to secure patent advantages to the Government arising from Government-financed research and development.

An interdepartmental meeting on the subject, chaired by Dr. Welsh, was held September 27, 1961,¹²³ and on October 11, 1961, the Defense Department was in a position to furnish for review the proposed new language covering all classes of contracts which might reasonably be

¹²² Ibid., page 71.

¹²³ Council files.

expected to produce any information usable in the communications satellite program.¹²⁴

Summary of the Council action in this area is set forth in Dr. Welsh's letter of November 16, 1961, to Senator McClellan, Chairman of the Senate Subcommittee on Patents, Trademarks, and Copyrights.¹²⁵

"At the time when the National Aeronautics and Space Council was engaged in the development of policy recommendations for the President in the communications satellite area, it was agreed that the Council staff would see what could be done to attain some increased degree of consistency in communication satellite research and development contracts as between NASA and the Department of Defense.

"The recommendations made by the Council as to communications satellite policy were approved by the President and issued by him on July 24. Shortly thereafter, the Council staff initiated an examination of the basic differences in patent contract policy as between NASA and Defense. After several group meetings, and a number of discussions with individual experts in the Government, it was agreed that the Defense Department representatives would examine and coordinate within their own Department the possibility of amending their regulations so as to adopt language similar to that included in NASA's recently consummated contract with the American Telephone and Telegraph Company in the field of communications satellites. That contract had been worked out with the assistance of the Justice Department. We also suggested to the Department of Defense representatives that they should see how widely this new language, if agreed to, might be used throughout the Department in all of their research and development contracts.

"The Department of Defense undertook such an examination and then advised that agreement had been obtained to revise existing communications satellite contracts with the following language:

¹²⁴ Memorandum from Yarmolinsky, Special Assistant to the Assistant to the Secretary of Defense, October 11, 1961.

¹²⁵ Letter, as cited.

'In addition to the above-mentioned license to the Government, the contractor does hereby grant to the Government the right to grant sub-licenses to others, under such terms and conditions as may be prescribed, for the practice of any subject invention throughout the world in the design, development, manufacture, operation, maintenance, and testing of communications satellite systems, and of equipment, components, ground tracking, transmitting and receiving facilities therefor.'

"The Department of Defense also advised that such language would be included in all future contracts covering research and development in any field related to space, including space exploration and space communication. This general statement has been interpreted by the Department of Defense to apply specifically to the communications and related electronics aspects of all inventions in space, research and development."

Ownership of Communications Satellites

Concurrently with the examination of patent aspects, the ownership question was being vigorously explored by the Council staff. Dr. Welsh's recollection follows:

"The main interest was given toward protecting the public interest, but then the question was, 'How best should this be implemented?' And this was, of course, what prompted us to draft legislation, which was a long, drawn-out process in the sense that we had meeting after meeting, day after day, on the thing during the fall of 1961.

"I was largely responsible for this business of the emphasis of private enterprise. My reasoning went something like this:

"That the United States Government should undertake those activities which private enterprise will not do, cannot do, or will not do in the public interest. In other words, if it can be done in the public interest, in this case with adequate regulation, why then it should be a function of private enterprise -- there's no point in the Government undertaking this. If I had any doubt in my mind that the public interest would not

be protected, however, I would favor the Government ownership of it, because I have no question of ideology in this thing at all. It was a question of where would it be done best and most effectively, and, if it could be done effectively and well in a capitalistic system by private enterprise, that's the way it should be done.

"I did prepare a paper which gave the pluses and minuses on public ownership and private ownership, and we discussed that among the participants before we arrived at a drafting job. But President Kennedy requested then in the fall of 1961, directly to me, that we should come up with recommendations as to how the policy, which he had issued on July 24, 1961, could best be put into effect. And you may recall that the policy paper itself stated that the Space Council would have continuing functions in this field.

"So I drafted a series of alternatives, particularly as regards whether it should be a Governmental or a private entity for carrying out the policy."¹²⁶

Mostly the same agency representatives who had participated in the drafting of the policy document participated in the drafting of this piece of legislation.

On November 6, 1961, agreement was reached at an interagency meeting chaired by Dr. Welsh that there was a need for legislation on this subject.¹²⁷

Three days later, on November 9, President Kennedy sent word to Dr. Welsh that he wanted to have by December 1 a draft recommendation for implementing the policy on communications satellites to include the nature of the organization required. Drafting and coordinating responsibility were

¹²⁶ Oral History, page 30.

¹²⁷ National Aeronautics and Space Council files.

placed with the Council staff.¹²⁸

Then began an intensive series of interagency meetings under Dr. Welsh's chairmanship on November 14, 15, 17, 22, and 24. As a result, on November 27, Dr. Welsh was in a position to furnish Vice President Johnson with a draft bill whose basic principles were:¹³⁰

1. Congress would authorize creation of a profit corporation, privately owned;
2. Ownership in the corporation would not be limited to a few chosen companies;
3. Provision would be made to prevent domination by any one investor;
4. The corporation would own the satellites and ground terminal stations, with the rest of the system being owned by authorized common carriers as is the situation now in the communications field;
5. The President would provide for surveillance and coordination of the development and operation of the system, so as to make certain that the public interest aspects were met and that the operational date was achieved as soon as possible.

¹²⁸ National Aeronautics and Space Council files, Chronology, November 9, 1961.

¹²⁹ Not used.

¹³⁰ Memorandum for the Vice President from Dr. Welsh, November 27, 1961, "Draft Legislation for Communications Satellite Organization."

Reactions to the November 27 draft were soon forthcoming from the departments and agencies concerned. These were summarized by Dr. Welsh in a Memorandum for the Record dated November 29, 1961, as follows:

"Representatives of NASA and FCC recommended that ownership in the new proposed corporation should be limited to communications carriers, NASA suggesting that the limitation be to communications carriers as a whole, while the FCC suggested that it be limited to only international communications carriers.

"State and Defense reported that they do not feel it is within the scope of their responsibilities to express views on who should, and who should not, own stock in the corporation. Rather, they indicated that their concern was in having a draft proposal which would meet the international and defense objectives respectively. While the Defense Department is having the language of the proposed bill examined more carefully, it was their current view that the defense requirements were met adequately in the draft of November 27. The State Department also took the general view, but proposed some additional language to emphasize and clarify the international aspects of the draft proposal.

"NASA representatives expressed the view that the proposed corporation might be able to carry out its mission more quickly and more effectively if non-carriers were excluded from investment rights. They did recognize, however, that, if such exclusivity were introduced into the bill and the corporation did become in fact a common carrier's carrier, the great majority of the financing would come from just one company, i. e., the American Telephone and Telegraph Company.

"The FCC representatives also showed no objection to the principles of the proposed draft, except to make it clear that the FCC has already taken the position that ownership in the corporation should be limited to international carriers. They also joined OEP in questioning whether the Government should be authorized to contract for channel uses at whole-sale rates.

"Budget, OEP, and the Office of the Scientific Advisor made a few non-basic language suggestions.

"Justice strongly supports the November 27 draft and, in fact, gave major assistance to the Space Council staff in the development of the document."

The draft legislation was transmitted to President Kennedy by Vice President Johnson on December 1, 1961. He was careful to point out that:

" . . in recognition of the established procedures for clearance of proposed legislation through the Bureau of the Budget, it did not seem appropriate to bring the enclosed draft to a formal vote of the members of the Council. Accordingly, this document is presented as a well-coordinated, but not formally agreed to, paper for such further action as you believe is required and merited.¹³¹

"It is my understanding that there is general support for this plan among the interested agencies. However, it should be noted that while otherwise agreeing with the draft, representatives of two agencies (NASA and FCC) favored limiting ownership in the corporation to common carriers and two agencies (OEP and FCC) indicated opposition to granting authority to the Government to contract directly with the new satellite corporation."

In the meantime, on November 28, 1961, Senator Kerr announced and released a draft bill as an amendment to the National Aeronautics and Space Act for organizing a communications satellite system.

On December 13, 1961, in response to a White House request, Dr. Welsh prepared a Memorandum for President Kennedy summarizing the communications satellite situation, and outlining the difference between the Administration draft, the bill prepared by Senator Kerr, and the ad hoc carriers' recommendation.¹³²

¹³¹ Memorandum for the President from the Vice President, December 1, 1961.

¹³² Memorandum, as stated.

"When the bill was drafted," Dr. Welsh recalled, "it was sent down . . . to Palm Beach, and (President Kennedy) went over it word for word, and made . . . few changes."¹³³

A summary of the steps taken to draft the proposed legislation was provided to the President on December 13, 1961.¹³⁴

On February 7, 1962, the President sent the proposed ComSat legislation to the Hill. On February 19, 1962, Dr. Welsh requested the Vice President's permission to testify at the Congressional hearings in support of the bill.¹³⁵

On March 7, 1962, Dr. Welsh's testimony in support of the President's proposed bill was submitted by Mr. Katzenbach to the Senate Committee on Aeronautical and Space Sciences; and on March 13, 1962, Dr. Welsh testified before the House Committee on Interstate and Foreign Commerce. In these statements, he pointed out the responsiveness of the proposed bill to the President's earlier policy statement.¹³⁶

This was followed by another appearance before the Senate Interstate and Foreign Commerce Committee on April 10, 1962, to answer specific issues

¹³³ Oral History, pages 32-33.

¹³⁴ Memorandum for the President from Dr. Welsh, December 13, 1961.

¹³⁵ Memorandum for the Vice President from Dr. Welsh, February 19, 1962.

¹³⁶ Dr. Welsh testimony before the Committee on Aeronautical and Space Sciences, March 7, 1962. Dr. Welsh testimony before the House Committee on Interstate and Foreign Commerce, March 13, 1962.

which had come up since the original submission by the President.¹³⁷

Dr. Welsh's version of the legislative struggle that occurred follows:

"There was no question that the legislation was going to pass. The only question was, 'When will it pass?' There was no question that it was going to be a very lopsided vote in favor of the passage, so, again, there was no point in using the President's asset of persuasion on such a very small number of people . . .

"Another significant aspect of this thing was they did invoke cloture on the bill. Now, this was significant, not because of the legislation itself but because of the fact it established the voting of cloture in which we got a number of the people who usually vote against cloture to vote for it."¹³⁸

The legislation passed the House 354 to 9, May 3, 1962; passed the Senate, 66 to 11, August 11, 1962; passed the House as amended from 372 to 10, August 27, 1962.

On August 28, 1962, Dr. Welsh was able to recommend to the Director of the Bureau of the Budget that the H. R. 11040, passed by both the House and the Senate, was an effective expression of the President's communication policy as announced on July 24, 1961, and that he recommended that the President sign the bill into law.¹³⁹

On June 11, 1962, Mr. L. C. White, Assistant Special Counsel to the President, requested the Chairman of the National Aeronautics and Space Council, among others, to make recommendations for prospective

¹³⁷ Statement by Dr. Welsh before Senate Interstate and Foreign Commerce Committee, April 10, 1962.

¹³⁸ Oral History, pages 37-39.

¹³⁹ Memorandum to Mr. Bell (BOB) from Dr. Welsh, August 28, 1962.
Remarks of the President upon signing H. R. 11040, August 31, 1962.

incorporators for ComSat Corporation.¹⁴⁰

On June 18, 1962, Mr. White advised Dr. Welsh that a complete set of names of incorporator possibilities would be made available, and asked him to do the initial rough culling of names.¹⁴¹

On July 23, 1962, Dr. Welsh, in a memorandum to Mr. White, focused on critical questions relative to the number of incorporators, their desired background, their operating expenses, etc.¹⁴²

This was followed by a meeting in the White House on July 26, 1962, where the basic decisions concerning the incorporators were made.¹⁴³

Names were submitted by many interested people. The Council staff managed the collection and review of the records; and on October 15, 1962, President Kennedy appointed 12 incorporators to initiate the life of ComSat.¹⁴⁴

On October 30, in response to a message from President Kennedy, Dr. Welsh provided a brief memorandum outlining the major functions of the incorporators and listing the major policy criteria for use by the President in his initial meeting with the incorporators.¹⁴⁵

¹⁴⁰ Memorandum to Chairman, National Aeronautics and Space Council (among others) from Mr. White, June 11, 1962.

¹⁴¹ Memorandum to Dr. Welsh from Mr. White, June 18, 1962.

¹⁴² Memorandum to Mr. White from Dr. Welsh, July 23, 1962.

¹⁴³ Memorandum for Record, July 27, 1962.

¹⁴⁴ Letter from President Kennedy to each incorporator, October 15, 1962.

¹⁴⁵ Memorandum for the Vice President from Dr. Welsh, October 30, 1962.

The incorporators had a draft of the ComSat Corporation Articles of Incorporation and By-Laws ready for comment on December 18, 1962. Meetings were held and evaluations made.¹⁴⁶

(Please pick up page 87, which is Confidential.)

¹⁴⁶ Memoranda to Mr. K. R. Hansen (BOB) from Dr. Welsh, December 18, 1962; January 8, 1963; January 12, 1963; and January 30, 1963.

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The National Security Council established a subcommittee on communications on October 26, 1962.¹⁴⁷

On January 23, 1963, a Special Subcommittee on Communications Satellites to the NSC (NSAM 201) subcommittee was established:

1. To keep abreast of and report to the NSC subcommittee on current plans and developments regarding communications satellite systems.
2. To study and report on the potential impact of communications satellite programs on the NSC and NSC requirements which should be taken into account in the development of communications satellites. The Council was invited to designate a representative. Mr. R. W. Hale was designated to represent the Council staff.¹⁴⁸

A report was issued by this Special Subcommittee on Communications Satellites which concluded that:

1. Communications satellites will have a significant impact on the NSC, probably starting in 1966.
2. The prospects of communications satellites are sufficiently promising to warrant de-emphasizing terrestrial systems.
3. Availability of adequate funds was critical to fulfillment of communication satellite promises.¹⁴⁹

¹⁴⁷ NSAM No. 201 (Confidential)

¹⁴⁸ NSC memorandum to Dr. Welsh, January 28, 1963. Memorandum to P. H. Burris from Dr. Welsh, January 30, 1963. (Confidential)

¹⁴⁹ Memorandum to R. W. Hale from NSC (P. H. Burris), April 10, 1963. (Confidential)

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Authority NSA 11/19/79, State 4/4/80, NSC 5/19/80
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On June 5, 1963, the President established an ad hoc committee on communications satellite problems which included Dr. Welsh as a member.¹⁵⁰

This committee was to guide and coordinate the government's action in bringing into reality the intent of the ComSat Act of 1962, both in terms of creating a corporate entity and establishing the organizational framework for the international global communications system.

Dr. Welsh argued that the U. S. have a separate military communications satellite system; that ComSat Corporation, as a private U. S. corporation cooperate with other nations in the communications field; that ComSat Corporation should proceed as soon as possible to obtain equity funds; and that NASA and DOD continue R&D in the communications field.¹⁵¹

The policy question of reimbursement of the government for launch costs incurred when launching commercial communications satellites was resolved in a meeting attended by representatives from NASA, Justice, and the Council.¹⁵²

¹⁵⁰ Memorandum to Mr. Katzenbach from Mr. R. A. Dungan (White House), June 5, 1963. Memorandum to Dr. Welsh from R. L. Clark (OEP), June 10, 1963.

¹⁵¹ Position paper distributed at June 15, 1963, meeting of ad hoc committee on Communication Satellite Problems. Memorandum to R. L. Clark from Dr. Welsh, July 30, 1963.

¹⁵² Memorandum for the President from Dr. Welsh, December 24, 1963.

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On January 20, 1964, Dr. Welsh recommended to Mr. Katzenbach, as chairman of the ad hoc committee on communications problems, that the President be briefed on the ComSat Corporation picture. At the January 30, 1964, meeting of the ad hoc committee, Mr. Katzenbach advised that he would prepare a memorandum to the President on the progress made in the communications satellite area.¹⁵³

NSAM 338

On January 12, 1965, the Director of OTM requested Dr. Welsh to participate in developing an over-all policy concerning allowable assistance and encouragement to other nations which may lead to their development and acquisition of independent satellite communications capabilities.¹⁵⁴

Various meetings and discussions ensued; memoranda were exchanged. On February 26, 1965, the Special Assistant to the President on Telecommunications submitted a statement of policy to Dr. Welsh for consideration.¹⁵⁵

¹⁵³ Memorandum to Mr. Katzenbach from Dr. Welsh, January 30, 1964.

¹⁵⁴ Memorandum to Dr. Welsh from Mr. Mrozinski, February 3, 1964.

¹⁵⁵ Memorandum to Dr. Welsh from J. D. O'Connell, January 12, 1965.

¹⁵⁶ Memorandum to Dr. Welsh from O'Connell, February 26, 1965.

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Comments were made by memorandum on March 1, 1965.¹⁵⁷ On May 12, 1965, a revised copy of a policy statement was submitted to Dr. Welsh.¹⁵⁸ Non-enthusiastic concurrence was provided on May 17, 1965.¹⁵⁹ The final policy statement was promulgated on September 15, 1965, as NSAM 338.¹⁶⁰

As a follow-on to the ad hoc intra-government committee (Katzenbach committee) on communication policy matters, the Director of Telecommunications Management proposed the formation of a new Communications Satellite Policy Coordination Committee, to consist of representatives at the Presidential Appointee level. The Executive Secretary of the National Aeronautics and Space Council was asked to participate as a member.¹⁶¹

Dr. Welsh accepted and designated two staff members to serve on ad hoc panels as necessary.¹⁶²

¹⁵⁷ Memorandum to O'Connell from Dr. Welsh, March 1, 1965.

¹⁵⁸ Memorandum to Dr. Welsh from O'Connell, May 12, 1965.

¹⁵⁹ Memorandum to O'Connell from Dr. Welsh, May 17, 1965.

¹⁶⁰ Memorandum to various (NSAM 338) from McGeorge Bundy, September 15, 1965.

¹⁶¹ Letter to Dr. Welsh from DTM, February 21, 1966.

¹⁶² Memorandum to DTM from Dr. Welsh, February 23, 1966.

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A U. S. National Program Policy Panel and a Communications Satellite Technology Panel were organized as part of the new Policy Coordination Committee.¹⁶³

In the Policy Coordination Committee meeting on March 23, 1966, one of the major tasks identified was to review and revise as necessary the policy concerning U. S. assistance in the development of foreign communications satellite capabilities, NSAM 338.¹⁶⁴ The Council staff provided extensive support towards bringing this policy statement up to date.¹⁶⁵

On October 31, 1966, the Executive Secretary of the Council advised DTM that the Vice President would like a status report at the next Council meeting of the NSAM 338 revision.¹⁶⁶ Such a report was made to the Council on November 7, 1966.¹⁶⁷

¹⁶³ Memorandum to Members from DTM, March 24, 1966.

¹⁶⁴ NSAM 338, September 15, 1965 (Confidential). National Aeronautics and Space Council meeting, March 23, 1966 (Confidential).

¹⁶⁵ Memorandum to Dr. Welsh from Mr. Mrozinski, October 4, 1966.
Memorandum to O'Connell from Dr. Welsh, October 5, 1966.

¹⁶⁶ Memorandum to DTM from Dr. Welsh, October 31, 1966.

¹⁶⁷ Memorandum to DTM from Dr. Welsh, November 7, 1966.

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Work continued on the revision of NSAM 338. Drafts were commented on, and new drafts were composed and offered.¹⁶⁸

On June 28, 1967, OTM submitted a proposed revision of NSAM 338 to the White House. This was noted and concurred in by the President on July 12, 1967.¹⁶⁹

On November 29, 1965, the President established a Working Group under Chairmanship of Leonard Marks, Director of USIA, to determine whether national policy would be served by encouraging the construction of ground stations for the global satellite system for LDC's. Dr. Welsh was designated a member of this group, which finished its work and submitted its report to the President on January 28, 1966.¹⁷⁰

On March 4, 1966, the policy recommended by the Working Group was approved and promulgated as NSAM 342.¹⁷¹

Another policy action placed before the Communications Satellite Policy Coordination Committee involved the government's role as an "authorized

¹⁶⁸ Memoranda to OTM from Dr. Welsh, November 22, 1966, and January 13, 1967. Memorandum to W. E. Berg from Dr. Welsh, May 13, 1967. Memorandum to OTM from W. E. Berg, May 17, 1967.

¹⁶⁹ Memorandum to Walt W. Rostow from OTM, June 28, 1967. NSAM 338 (Revised), July 12, 1967.

¹⁷⁰ Memorandum to the President from Leonard Marks, January 31, 1966.

¹⁷¹ NSAM 342, March 4, 1966 (Confidential).

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user" of ComSat communications services. Initial negotiations were between NASA and ComSat Corporation.¹⁷²

This problem was given to the Communications Satellite Policy Coordination Committee in its meeting held on April 15, 1966.¹⁷³

Extensive discussions took place between the FCC, ComSat Corporation, DOD, NASA, and the common carriers. In a Public Notice dated June 23, 1966, the FCC determined that the government could procure communications services from ComSat only in unique and exceptional circumstances. This was reported to the Vice President on July 13, 1966.¹⁷⁴

The House Military Operations Subcommittee held hearings on this subject and issued H. R. 2318, entitled, "Government Use of Satellite Communications." This report was referred to Dr. Welsh for comments.¹⁷⁵

Dr. Welsh responded to this with a strong clarification of government's right as an authorized user as stated in the ComSat Act of 1962.¹⁷⁶

¹⁷² Letter to B. Moyers (White House) to J. D. O'Connell, October 8, 1965.

¹⁷³ Internal staff memorandum to Dr. Welsh, April 18, 1966.

¹⁷⁴ Memorandum for the Vice President from Dr. Welsh, July 13, 1966.

¹⁷⁵ Letter to Dr. Welsh from Holifield, October 27, 1966.

¹⁷⁶ Letter to Honorable Chet Holifield from Dr. Welsh, November 2, 1966.

A broader picture of the policy problems was revealed in a paper included in a letter to Secretary Dean Rusk from J. D. O'Connell dated February 21, 1967 (Confidential), "A Global System of Satellite Communications -- The Hazards Ahead." Dr. Welsh was asked to comment and he did so in a Confidential memorandum dated March 1, 1967.

OTM prepared proposed legislation in the fall of 1966 to amend the ComSat Act of 1934 to permit consolidation or merger of the international carriers. On March 7, 1967, Dr. Welsh advised the BOB of his objections to the proposed legislation in a memorandum to David Nathan.

On June 26, 1967, Dr. Welsh provided the President, at the President's request, eight basic communications policy recommendations, including the recommendation to appoint an Executive Branch Task Force to study the major communications issues.¹⁷⁷

On August 14, 1967, the President issued a White House message on Communications Policy, including the appointment of a Task Force on Communications Policy. Dr. Welsh participated actively in the drafting of the message. In the international carrier merger proposal, for example, the President accepted Dr. Welsh's minority position that the merger issues needed further evaluation. Vice President Humphrey was advised of these developments.¹⁷⁸

¹⁷⁷ Memorandum for the President from Dr. Welsh, June 26, 1967.

¹⁷⁸ Memorandum for the Vice President from Dr. Welsh, August 15, 1967.

Besides direct participation in numerous Task Force and staff meetings, numerous communications took place between the Council staff and the Communications Policy Task Force members and the Communications Policy Task Force Central Staff, expressing new ideas, modifications and/or comments on proposed ideas. ¹⁷⁹

Space Frequency Spectrum Assignment

On May 12, 1961, the Executive Secretary of the Interdepartmental Radio Advisory Committee provided "Preliminary Views of the U. S. of America -- Frequency Allocations for Space Radio Communications" in preparation to the convening of an Extraordinary Administrative Radio Conference (EARC) in early 1963, in a letter to Mr. F. C. Alexander, Director of Telecommunications in OCDM. A copy of this was provided to the Executive Secretary of the National Aeronautics and Space Council. The Executive Secretary and members of the Council staff participated in a series of meetings to refine the U. S. position. ¹⁸⁰

¹⁷⁹ Memorandum to Frank Loy from Berg, October 9, 1967. Memorandum to O'Connell from Dr. Welsh, June 11, 1968. Memorandum to Leonard Marks from Dr. Welsh, June 12, 1968. Memorandum to Berg from Dr. Welsh, June 8, 1968. Memorandum to Alan R. Novak from Dr. Welsh, July 30, 1968.

¹⁸⁰ Letter to F. C. Alexander from Paul D. Miles, May 12, 1961. Memorandum to Dr. Welsh from Alexander, July 6, 1961. Memorandum to Alexander from Dr. Welsh, November 28, 1961. Memorandum to Dr. Welsh from Alexander, December 1, 1961. Memorandum to Alexander from Dr. Welsh, December 2, 1961. Memorandum to Dr. Welsh from Alexander, January 16, 1962. Memorandum to Alexander from Dr. Welsh January 18, 1962.

In addition to direct participation in numerous meetings, many contacts took place between the Executive Secretary of the Council and the Chairman of the Communications Policy Task Force, expressing new ideas, modifications and/or comments on proposed ideas. Also, Win Berg of the Council staff met with and transmitted improvements to the Central Staff of the Task Force.

The basic position of the Executive Secretary on the major issues considered by the Communications Policy Task Force was expressed in a memorandum to Eugene V. Rostow from Dr. Welsh dated October 18, 1968. The evolutionary process of trying to weave these views into the final report is indicated in additional memoranda to Eugene V. Rostow from Dr. Welsh dated November 4, 1968, November 16, 1968, November 18, 1968, November 22, 1968, and December 6, 1968. The last two memoranda suggested that a series of footnotes in the final report be included which clearly state the Executive Secretary's policy disagreements with the report. For convenience of reference, the cited reports are included in the appendix materials (Appendix E).

¹⁷⁹ Memorandum to Frank Loy from Berg, October 9, 1967. Memorandum to O'Connell from Dr. Welsh, June 11, 1968. Memorandum to Leonard Marks from Dr. Welsh, June 12, 1968. Memorandum to Berg from Dr. Welsh, June 8, 1968. Memorandum to Alan R. Novak from Dr. Welsh, July 30, 1968.

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¹⁸⁰ Letter to F. C. Alexander from Paul D. Miles, May 12, 1961. Memorandum to Dr. Welsh from Alexander, July 6, 1961. Memorandum to Alexander from Dr. Welsh, November 28, 1961. Memorandum to Dr. Welsh from Alexander, December 1, 1961. Memorandum to Alexander from Dr. Welsh, December 2, 1961. Memorandum to Dr. Welsh from Alexander, January 16, 1962. Memorandum to Alexander from Dr. Welsh, January 18, 1962.

On June 3, 1962, the Director of the Telecommunications Office forwarded a copy of the State Department's approved "Proposals of the U. S. of America for the Extraordinary Administrative Radio Conference for Space Radio Communications and Radio Astronomy."

On April 11, 1967, in an office memorandum to Dr. Welsh, a new approach to managing the frequency spectrum was suggested.¹⁸¹

A copy of this proposal was made available informally to both OTM and the FCC.

Japanese Olympics

On May 20, 1964, Dr. Welsh advised Mr. Busby (White House) of the details and issues involved in televising the Olympic Games, to be held in Japan, live to the U. S. He also recommended that the U. S. proceed with the experiment.¹⁸²

Further correspondence and discussions ensued. On September 25, 1964, a meeting was held bringing representatives of agencies involved together to implement the proposal.¹⁸³

¹⁸¹ Memorandum to Dr. Welsh from Berg, April 11, 1967.

¹⁸² Memorandum to Mr. Busby from Dr. Welsh, May 20, 1964.

¹⁸³ Memorandum for the Record by Edelson, September 25, 1964.

On September 30, 1964, the President agreed to talk to Japan on television via Syncom prior to the Olympics.¹⁸⁴

The President participated on October 7, 1964, in the successful inauguration of the U. S. -Japan link via Syncom III satellite.¹⁸⁵

Domestic Satellite System

On September 21, 1965, the American Broadcasting Company, Incorporated (ABC) applied to the FCC for authority to construct and operate a satellite and associated earth stations for domestic TV distribution purposes. Statements from approximately eighteen other entities, including the Ford Foundation and ComSat Corporation, were received by the FCC. Because of policy considerations, the domestic satellite issue was also studied by the Communications Satellite Policy Coordination Committee.¹⁸⁶ This was reported to the Vice President on August 11, 1966.¹⁸⁷

On December 16, 1966, ComSat Corporation filed its proposal to develop and deploy a domestic communications satellite system.¹⁸⁸

¹⁸⁴ Memorandum to Jenkins from Dr. Welsh, September 30, 1964. Memorandum for the Record by Edelson, September 30, 1964.

¹⁸⁵ Memorandum to Rowan from Dr. Welsh, October 7, 1964.

¹⁸⁶ Ford Foundation filing with FCC, August 2, 1966. ComSat filing with FCC, August 2, 1966. Letter to Dr. Welsh from DTM, February 21, 1966.

¹⁸⁷ Memorandum for the Vice President from Dr. Welsh, August 11, 1966.

¹⁸⁸ Letter to Dr. Welsh from McCormack, December 19, 1966.

On December 28, 1966, a meeting was held with OTM, ComSat, and National Aeronautics and Space Council staff attendance. ComSat was encouraged to modify its December 16, 1966, file and propose an experimental domestic satellite system for "market development" including ETV experimentation by February 1, 1967.¹⁸⁹

On March 31, 1967, ComSat Corporation filed with the FCC their proposal to deploy a Domestic Pilot Communications Satellite System for "market development," including free channels for ETV.¹⁹⁰

On April 5, 1967, Mr. McCormack, ComSat Corporation, provided Dr. Welsh with a copy of ComSat's Pilot Program filing to the FCC.

In early March 1967, Douglass Cater asked Dr. Welsh for a summary evaluation of the recent Ford Foundation proposal for ETV satellites. This was provided by a memorandum dated March 7, 1967.

National Geodetic Satellite Program

On March 22, 1962, Dr. Welsh advised the Vice President of a controversy between the DOD and the scientific community relative to the security classification of the geodetic satellite program, Project Anna.¹⁹¹

Mr. George Reedy advised Dr. Welsh that the Vice President was interested in the Anna controversy and wanted specific recommendations

¹⁸⁹ Memorandum to Dr. Welsh from Berg, December 29, 1966.

¹⁹⁰ ComSat Corporation filing with FCC, March 31, 1967.

¹⁹¹ Memorandum for the Vice President from Dr. Welsh, March 22, 1962.

for action by the National Aeronautics and Space Council. Dr. Welsh responded by recommending that a staff level review be conducted first, to be followed, if needed, by a Council meeting.¹⁹²

Hearings were conducted by the House Science and Astronautics Committee on Anna and recommended that the program be turned over to NASA. DOD and NASA came to an agreement, signed in December 1962.¹⁹³

On February 12, 1964, Dr. Welsh wrote letters to Drs. Hornig, Fubini, Holloman, and Seamans advising them of his interest in the geodetic satellite program and urging that adequate priority be accorded this program.

On February 25, 1964, Dr. Fubini, DOD, responded and concurred in the importance of the program and welcomed the Council's good offices in getting underway an interagency program that meets the requirements. On March 27, 1964, DOD and NASA concurred in the review of the program conducted by the Bureau of the Budget.¹⁹⁴

Instrumentation Ships

In considering the FY 1964 NASA budget, Chairman Miller asked the Vice President to establish a unified position relative to the national need

¹⁹² Memorandum for the Vice President from Dr. Welsh, March 27, 1962.

¹⁹³ Memorandum to Dr. Welsh from Edelson, January 2, 1964.

¹⁹⁴ Memorandum for the Record, BOB, March 27, 1964.

for instrumentation ships as part of the ground environment supporting space operations.¹⁹⁵

A Council staff member was assigned to follow the progress of DOD and NASA in obtaining a unified position.¹⁹⁶

An agreement on Instrumentation Ships was signed by DOD and NASA representatives on January 15, 1964, which was forwarded to the Chairman of the House Sciences and Astronautics Committee on January 18, 1964.¹⁹⁷

Earth Resources Satellite

On September 21, 1966, the Department of Interior made an uncoordinated news release about an Earth resources satellite program. Promptly the Executive Secretary of the National Aeronautics and Space Council called a staff level meeting with representatives from NASA, Interior, Agriculture, State, NSC, AID, Geological Survey, and members of the council staff. This was to initiate some needed coordination and to establish a full awareness by all agencies of this across-the-board interest.¹⁹⁸

¹⁹⁵ Chairman Miller letter to Chairman, National Aeronautics and Space Council, August 30, 1963.

¹⁹⁶ Letter to Chairman Miller from Vice President Johnson, September 4, 1963.

¹⁹⁷ Letter to Chairman Miller from Dr. Welsh, January 18, 1964.

¹⁹⁸ Record of meeting, September 26, 1966. Memorandum for the Vice President from Dr. Welsh, September 26, 1966.

On November 15, 1966, Dr. Welsh was asked to comment on a proposed NSAM covering Earth Sensing Satellites.¹⁹⁹ Dr. Welsh responded with suggestions to broaden the scope of the NSAM.²⁰⁰

On June 1, 1967, the Vice President was provided with a broad discussion covering surveying of Earth resources which identified the pertinent policy issues.²⁰¹

The Vice President included Earth Resources Satellites on the agenda for the Council meeting held on June 22, 1967. The Vice President made known his strong support for increased effort in this area.²⁰²

This was re-emphasized in a memorandum from the Vice President to Dr. Welsh dated October 7, 1967. On November 27, 1967, Dr. Welsh advised the Vice President of the sharp cuts being made by the BOB in the Earth Resources Satellite Program.²⁰³

The Vice President responded by taking action with the BOB in a memorandum to Charles Schultz on November 30, 1967.²⁰⁴

¹⁹⁹ Draft NSAM, November 15, 1966 (Confidential).

²⁰⁰ Memorandum to C. E. Johnson from Dr. Welsh, November 15, 1966.

²⁰¹ Memorandum to the Vice President from Dr. Welsh, June 1, 1967.

²⁰² Memorandum to Vice President's members from Colonel Paffel, June 23, 1967. Memorandum to Dr. Hornig from Dr. Welsh, June 29, 1967.

²⁰³ Memorandum for the Vice President from Dr. Welsh, November 27, 1967. Memorandum for the Vice President from R. W. Hale, November 28, 1967.

²⁰⁴ Memorandum to Charles Schultz from the Vice President, November 30, 1967.

The Vice President's position was made known to NASA by a memorandum from Dr. Welsh on December 13, 1967.²⁰⁵

The Vice President was advised of the BOB position on December 12, 1967.²⁰⁶

On December 28, 1967, NASA advised Dr. Welsh of its compromise position with BOB relative to the Earth Resources Satellite Program.²⁰⁷

The Vice President was advised of the status of the program.²⁰⁸ The Vice President's continuing interest was indicated in a memorandum dated February 17, 1968.²⁰⁹

²⁰⁵ Memorandum to Mr. Webb from Dr. Welsh, December 13, 1967.

²⁰⁶ Memorandum to the Vice President from Charles Schultz, December 12, 1967.

²⁰⁷ Memorandum to Dr. Welsh from Mr. Webb, December 28, 1967.

²⁰⁸ Memorandum for the Vice President from Dr. Welsh, January 2, 1968.

²⁰⁹ Memorandum to Dr. Welsh from the Vice President, February 17, 1968.

AERONAUTICS

The subject of aeronautics came up briefly in the NASC meeting of November 1, 1961, which was called primarily to review program and budget requests for FY 1962 and FY 1963.²¹⁰

Advanced aeronautics was the major topic at the Council meeting of August 3, 1962. Programs included the X-15, XB-70, and V/STOL concepts as well as the challenge of the SST.²¹¹

The SST was considered in five special meetings in 1963 (one in February, one in April, three in May). After the May 30, 1963, meeting, Vice President Johnson sent to the President the Council's recommendation (augmented by several other agencies) that the Government undertake the program development.

In the NASC meeting of March 3, 1966, the President's aeronautics and space budget for FY 1967 was reviewed along with agency R&D programs planned under that budget.²¹²

On October 17, 1966, the Council met to review aeronautical planning of member agencies. The Administrator of FAA was invited to report on safety developments and air traffic control problems of the future.²¹³

²¹⁰NASC Meeting Report.

²¹¹NASC Meeting Report.

²¹²NASC Meeting Summary.

²¹³NASC Meeting Summary.

A special paper on the sonic boom problem relating to the SST was distributed and discussed at a Council meeting on November 15, 1966.²¹⁴

The Senate Aeronautical and Space Sciences Committee published a report on Aeronautical Research and Development Policy on January 31, 1968 (No. 957). It recommended, among other things, that a study of the benefits that accrue to the Nation from aviation be made as well as an analysis of the level of R&D effort that should be maintained by the Government to achieve the desired results. It was urged that this study be undertaken by NASA and/or Department of Transportation and that the results of the study be considered by the NASC, with the Department of Transportation and Bureau of the Budget participating, to determine the appropriate level of Government involvement in aeronautics R&D and the relative effort of participating agencies.²¹⁵

The Council met May 22, 1968, with invited representatives from the Secretary of Transportation's office to review the progress made by NASA and Transportation in working out the study recommended by the Senate Committee Report (No. 957). At that time, the Council Chairman called for expedited action and urged that DOD be coordinated in the study.²¹⁶

²¹⁴ Senate Document 90, May 19, 1966; Dr. Welsh testimony, February 2, 1967.

²¹⁵ Senate Report 957, January 31, 1968; Section IV, paragraphs 1, 2, and 3 (page 23).

²¹⁶ NASC Meeting Record.

On May 23, 1968, Dr. Welsh wrote a letter to Senator Anderson, Chairman of the Senate Aeronautical and Space Sciences Committee, to report on the NASC meeting of May 23 and he concluded by saying that the Council would give continuing attention to this matter and keep the Chairman informed of progress.

NASA-FAA

In order to coordinate the activities of the ten agencies at all levels, an agreement concerning the establishment of a NASA-FAA Coordinating Board was signed by NASA Administrator Webb, April 12, 1965, and FAA Administrator Halaby, April 21, 1965.²¹⁷

On May 3, 1965, Dr. Welsh wrote a memorandum to the Co-Chairman of the new Board seeking to send a Council observer to the Board meeting and noting the precedent involving his arrangement with the AACB.

R. J. Shank (FAA Associate Administrator for Development) wrote a letter to Dr. Welsh on May 18 stating that he and Dr. Bisplinghoff of NASA agreed as Co-Chairmen of the NASA-FAA Coordinating Board to have a member of the Council staff attend all meetings as observer.

NASA-FAA Coordinating Board

Raymond L. Bisplinghoff (NASA, Associate Administrator for Advanced Research and Technology) wrote a similar letter to Dr. Welsh on May 19, 1965.

The first meeting of this Board was held May 20, 1965, and monthly meetings were held through November 30, 1965. There were meetings

²¹⁷ Letter, W. F. Boone, Deputy Associate Administrator, to Dr. Welsh, April 29, 1965, Agreement enclosed.

in March, June, August, and November of 1966. In 1967, meetings were held in June and November, while in 1968 the first meeting was called for August 7, 1968.²¹⁸

This Board was badly needed at the start, but as time went on and people became acquainted, the major role of the meetings changed from exploration of problems to planning of research on problems and the vital establishment of priorities when dollars grew tighter.

Supersonic Transport

The President's Report on Aeronautics and Space Activities for 1961 carried reports on SST research and development by both NASA and FAA.

On January 31, 1962, an agreement was reached between NASA (Dr. Hugh Dryden, Deputy Administrator) and FAA (Najeeb Halaby, Administrator) covering each agency's FY 1963 budget request for SST activities.²¹⁹

In April, Dr. Welsh called FAA Administrator Halaby because several Members of the Congress had expressed concern over a report that the Mach 3 program might be abandoned in favor of Mach 2. Halaby denied that there was any such plan, and said the report probably came from an unsuccessful bidder for a study contract. Halaby said FAA wanted to push for Mach 3 even if the USSR should consequently build an SST first, because the U. S. must develop the best aircraft.²²⁰

²¹⁸ NASC file "NASA-FAA Coordinating Board" minutes or agenda or both for each meeting.

²¹⁹ Memorandum for Record, R. W. Hale, February 1, 1962 (to which there is attached a draft copy of the NASA/FAA document of January 31, 1962, and John Stack's transmittal memorandum to Dr. Dryden, dated February 1, 1962).

²²⁰ Memorandum for File, Dr. Welsh, April 23, 1962.

Vice President Johnson asked Dr. Welsh to call a meeting of the Council for August 3, 1962, to discuss advanced aeronautics, giving major attention to the subject of the SST. Halaby was invited to participate.²²¹

At the meeting on August 3, views on the subject were reported by Council members DOD and NASA, as well as FAA. Several problems were cited, including: costs of development, the market for such aircraft, economics, noise level and sonic boom, operating costs and airport runway requirements. It was agreed that a cost study and market analysis should be made by some competent research group. At the conclusion of the meeting, the Vice President asked DOD, NASA, and FAA to work promptly on the terms for a study, which Mr. Halaby said FAA could finance.²²²

On October 17, 1962, Dr. Welsh asked FAA to make an interim report on the studies in progress. Replying on October 22, the Agency reported that contracts had been completed with the Rand Corporation to study costs of development, production, and operation, and with the Stanford Research Institute to cover prospective airline traffic from 1968-1975 and to estimate the financial ability to purchase and operate SST's. The SRI contract also called for an estimate of the financial resources of the manufacturing industry to develop and manufacture SST's.²²³

²²¹ Memoranda to NASC members and Mr. Halaby from Dr. Welsh, July 30, 1962.

²²² Official record of NASC meeting of August 3, 1962.

²²³ Letter to Dr. Welsh from R. J. Shank, Deputy Administrator for Development, FAA, dated October 22, 1962.

On January 21, 1963, President Kennedy directed a memorandum to DOD, Commerce, NASA, CAB, FAA, and OST on the subject of "Civil Supersonic Transport." He referred to the budget message which had just been released and noted the R&D activities of FAA and NASA on the problems of supersonic flight. He asked the Administrator of FAA to "take the lead" in preparing a report that would summarize all relevant research results and include firm recommendations for further action. The President asked that the Administrator coordinate his activities with the Bureau of the Budget and the Council of Economic Advisers.²²⁴

On February 19, 1963, President Kennedy sent a memorandum to Vice President Johnson asking him to take the leadership in coordinating the recommendations on the SST. He referred to his memorandum of January 21, 1963, to the agencies most directly concerned, and concluded by saying he attached considerable significance to the forthcoming report and hoped that the study would be completed as early as was practicable.

The Vice President called a meeting of all the agencies interested in the SST Program -- including DOD, State, AEC, NASA, FAA, CAB, Commerce, OST, BOB, Council of Economic Advisers, and the Space Council staff. Vice President Johnson referred to the President's request of January 21 as well as to his later request that the Vice President coordinate and expedite the study and recommendations. Representatives of each of the agencies commented on the several key questions raised in the introductory remarks

²²⁴ White House Press Release dated January 21, 1963.

by Vice President Johnson, who summarized the reports and cited the need to get all of the facts available for examination as promptly as possible. He said he wanted the President to receive a coordinated package report based on the best information available.²²⁵

On February 20, 1963, Dr. Welsh sent a memorandum to the heads of each agency represented at the meeting of February 19, transmitting copies of the work statements or specifications for the SST studies being conducted by Rand Corporation and Stanford Research Institute. He reminded all that the Vice President wanted these papers to be reviewed for any deficiencies and he asked for immediate suggestions for improvement.

On March 6, 1963, Dr. Welsh reported to the Vice President by memorandum that there had been no suggestions that technical and economic issues were not being covered adequately in the studies under way. Dr. Welsh noted that the Department of State had suggested that there be an analysis of the psychological impact of a late entry by the U.S. in the SST field. He suggested that State collaborate with USIA in analyzing this possible international reaction.

Vice President Johnson asked for the views of Senator Barry Goldwater (a Major General in the Air Force Reserve) and received a letter from him dated March 8, 1963, in which he endorsed the project and suggested that industry experts should be consulted. In a response dated March 11, 1963, the Vice President noted that FAA was using an industry advisory group

²²⁵ Official report of SST meeting, February 19, 1963.

including all segments of the industry and thanked Goldwater for his contribution to the "authoritative expressions of views received."

In a letter to the Vice President, dated March 28, 1963, Administrator Halaby referred to the President's letter of January 21, and said he contemplated suggesting that the Secretaries of Labor and Treasury be added to the Cabinet-level group designated by that memorandum. The Vice President replied by letter of April 1 that he could see merit in having the two additions to the group which he would coordinate to develop a recommendation to the President regarding the SST.

On April 9, 1963, Dr. Welsh transmitted copies of an exchange of letters between FAA and the Rand Corporation to Council members, the Secretary of Commerce, and the heads of CAB, OST, BOB, and CEA. These contained information on the SST study and the nature and timing of reports by Rand.

Vice President Johnson conducted a meeting on the SST attended by all agencies designated by the President's memorandum of January 21, 1963, as well as the Secretaries of Labor and Treasury, and the heads of AEC, BOB, OST, the Council of Economic Advisers, and the NASC Executive Secretary.

This meeting was to review progress on the status of studies under way. All in attendance received copies of the State Department's report, done in collaboration with USIA, on psychological factors involved and possible political effects of the SST on foreign relations and particularly on the Atlantic Community.

Vice President Johnson asked each principal to suggest possible members of an informal committee from the general public to give its opinion on the draft SST report when it was ready. Dr. Welsh collected the names recommended and sent them, by memorandum, to the Vice President on May 3, 1963.

On May 15, Dr. Welsh sent copies of a draft report to all members of the Vice President's SST committee and at the same time called a meeting, to be held May 17 in the Executive Office Building, to discuss the draft report ("Limited Official Use Only").

At the meeting on May 17, the FAA draft report was reviewed and there were reports and discussions of balance-of-payments forecasts by Secretary Dillon (Treasury) and others, and economic studies by Under Secretary Martin (Commerce), Chairman Heller (CEA), and others.

In concluding the meeting, the Vice President requested written comments from each agency on the draft report which had been assembled under Hallaby's supervision.²²⁶

At a meeting held May 30, Vice President Johnson provided each principal with a set of the comments received from each agency, and these were fully discussed. It was decided that a special committee should be appointed to check all design characteristics and bidding ground rules for an open design competition. The Vice President appointed Halaby, FAA (Chairman); Secretary McNamara, DOD; Secretary Dillon, Treasury; Administrator Webb, NASA; and Executive Secretary Welsh, NASC, to serve as members.

²²⁶ Memorandum of Reminder from Dr. E. C. Welsh to all principals, dated May 20, 1963, setting deadline for comments to Dr. Welsh by May 22.

He reviewed his draft letter of recommendation to the President and, with concurrence, it was dispatched to the President after the meeting. (Director Gordon of BOB concurred with the letter with the understanding that prior to testimony on appropriations the ground rules of private participation would be fixed.) ²²⁷

Halaby met on June 3, 1963, with Secretaries McNamara and Dillon, NASA Deputy Administrator Dryden, and Dr. Welsh to discuss, adjust, and agree to two documents: (1) Commercial Supersonic Transport Objectives of the U.S., drafted by Halaby to disclose plans of action, and (2) Summary of Major Specifications for SST Development Contracts.

President Kennedy in his speech at the graduation ceremonies of the Air Force Academy on June 5, 1963, announced that the United States would enter upon a new program in civilian aviation. He noted that the leading members of the Administration, under the Chairmanship of the Vice President, had carefully considered the role of the Government, and said that it was his own judgment that the Government should immediately commence the new program in partnership with private industry (at a speed faster than Mach 2). ²²⁸

On June 14, 1963, the President sent a message to Congress outlining his plans for the development of a commercial SST and stating that he would separately send to the Congress a request for funds to meet the Government's share of the program and stating that a marshalling of funds of American industry will also take place as we enter this new era of commercial flight. ²²⁹

²²⁷ Letter from Vice President Johnson to The President, dated May 30, 1963.

²²⁸ White House Press Release, June 5, 1963 (Colorado Springs, Colo.).

²²⁹ White House Press Release, June 14, 1963.

The President sent a request to Congress on June 24, 1963, amending the 1964 budget request to include \$60 million for the FAA for FY 1964.²³⁰

Gordon M. Bain, Assistant Administrator (FAA) for Appraisal, sent to Dr. Welsh and others who served on the President's SST policy committee, a document which included a draft Request for Proposals (RFP) for developing the SST (July 12, 1963). After studying the document and gathering comments from all interested agencies, Dr. Welsh responded on July 23 with several suggestions designed to improve the RFP. Revised RFP's were transmitted by FAA on August 15, 1963.²³¹

President Kennedy announced the appointment of Eugene R. Black as Special Adviser to the President on the financial aspects of the SST program and of Stanley J. Osborne as Deputy to Black. These men were instructed to review the planning, study the financial problems, and provide their advice on financial aspects which were to be "useful in connection with consideration of manufacturers' proposals next Spring." (1964)²³²

On October 21, 1963, Dr. Welsh was called to testify about the Council's participation in the SST decision before the Subcommittee on Aviation of the Senate Commerce Committee.²³³

President Johnson received a report from Messrs. Black and Osborne dated December 19, 1963. It was circulated by the BOB to members of the policy committee on February 3, 1964, seeking each man's views on the

²³⁰ White House Press Release, June 24, 1963.

²³¹ Letter, Bain to Dr. Welsh, dated August 15, 1963.

²³² White House Press Release, August 14, 1963 (Hyannis, Mass.).

²³³ Hearing and letter to Chairman Monroney from Dr. Welsh, December 3, 1963.

"significant changes" in the program; method of selecting developers; Government organization to supervise; and financial arrangements.²³⁴

Bain of FAA transmitted to Dr. Welsh and other agency heads involved with SST policy, on February 17, 1964, the FAA summary of proposals received from airframe and engine manufacturers. A critical evaluation was promised as soon as possible.²³⁵

Dr. Welsh commented on the Black-Osborne Report in a letter to Kermit Gordon, Director of the BOB, dated February 27, 1964. He cited a few things in the report which FAA might consider as it went forward, but generally noted that the report replowed ground carefully/by President Johnson's Cabinet-level committee during 1963.²³⁶

In a memorandum to President Johnson on February 21, 1964, Dr. Welsh provided a summary of the technical evaluation of industry SST proposals. He noted that the Boeing airframe and GE turbojet engines came closest to the prescribed specifications and that industry estimated development costs at \$990 million and unit selling prices in mid-1970 dollars at \$27 to \$33 million each.²³⁷

President Johnson, on April 1, 1964, established a "President's Advisory Committee on SST" with the Secretary of Defense serving as Chairman.

²³⁴ BOB letter to Dr. Welsh and other agency heads, February 3, 1964.

²³⁵ Bain (FAA) transmittal to Dr. Welsh and others, February 17, 1964.

²³⁶ NASC SST files.

²³⁷ Dr. Welsh memorandum as cited.

Other members of the Committee were the Secretary of the Treasury, Secretary of Commerce, Administrator of NASA, and Administrator of FAA.²³⁸

At the request of George Reedy (then President Johnson's Press Secretary), Dr. Welsh wrote Mr. Reedy a memorandum on the SST program uncertainties, dated May 11, 1964, in which he recommended a strong three-point statement by the President. In a side note to Reedy the same day, Dr. Welsh suggested that any Presidential statement based on his recommendations be checked out with McNamara and Halaby.

On May 20, the President approved the program recommended by the SST Advisory Committee and the contractors proposed by the FAA Administrator and called on all agencies to work together with industry to produce an SST that will maintain American world leadership in the air.²³⁹

On August 24, Bain summarized SST program operations for Dr. Welsh and his staff.²⁴⁰

On December 3, 1964, the President announced the extension of the then current study contracts of airframe and engine manufacturers to give them more time to study the problem.²⁴¹

²³⁸ Executive Order 11149-4/1/64. On April 6, 1964, a White House Press Release added the names of John A. McCone (Director, CIA), Eugene Black, and Stanley Osborne.

²³⁹ White House Press Release, May 20, 1964.

²⁴⁰ Dr. Welsh memorandum of thanks to Bain, August 25, 1964.

²⁴¹ White House Press Release, December 3, 1964.

In a memorandum to the Vice President dated March 15, 1966, FAA Administrator McKee asked for favorable Council consideration and recommendation of a DX priority on the SST program. He pointed out the reasons for establishing one of the highest national-urgency positions for the program in order to get priority rating in certain listed critical areas, and noted that the Secretary of Defense had already indicated his favorable support.²⁴²

At a Council meeting on March 23, 1966, the FAA request for a DX priority on certain aspects of the SST project was endorsed unanimously. On March 24, 1966, the Vice President sent a letter to the President advising him of the Council's favorable action and recommendation.

On April 1, 1966, National Security Action Memorandum No. 344 was sent to the Vice President, Secretary of Defense, Secretary of Commerce, FAA Administrator, BOB Director, and Office of Emergency Planning (OEP) Director, assigning the highest national priority to the civil SST development program for research and development and for construction of two prototype aircraft. The unanimous recommendation of the NASC was noted and the action signed by the President. There was no press release.²⁴³

Dr. Welsh kept Vice President Humphrey informed from time to time on the status of the program.²⁴⁴

²⁴²Memorandum, Administrator McKee (FAA) to the Vice President, March 15, 1966.

²⁴³National Security Action Memorandum No. 344, April 1, 1966.

²⁴⁴Dr. Welsh memoranda to Vice President, September 30, 1966, and December 3, 1966.

After a 30-month competition, FAA announced the winners of the SST design competition to be Boeing for the airframe and General Electric for the engine.²⁴⁵

Congressman Frank T. Bow (R., Ohio) filed a bill in the House, January 11, 1967, proposing inter alia the establishment of an SST authority with the sale of bonds to the general public and Government guarantee of principal and interest on the bonds.²⁴⁶

Dr. Welsh wrote the Vice President a memorandum on January 12, 1967, recommending against the Bow bill.

On March 7, 1967, Dr. Welsh wrote the Vice President, in response to a query about the USSR-SST, that newspaper reports on this subject were wrong and that the USSR was not expected to fly a prototype SST for some time, surely not for the 1967 Paris Air Show.²⁴⁷

On April 29, 1967, President Johnson announced that he was authorizing the Secretary of Transportation to sign contracts for SST prototype construction and requesting Congress to appropriate \$198 million to finance the Government's share of this next phase.²⁴⁸

²⁴⁵ FAA Press Release, December 31, 1966.

²⁴⁶ Congressional Record, page H-104, January 11, 1967.

²⁴⁷ Memorandum, Dr. Welsh to the Vice President, March 7, 1967.

²⁴⁸ White House Press Release, April 29, 1967.

On July 18, 1967, Dr. Welsh advised the Vice President by memorandum that 129 delivery positions had been reserved by Boeing (to 12 U. S. and 14 foreign airlines) at about \$40 million each. This represents \$6.2 billion.

On October 25, 1967, Dr. Welsh advised the Vice President by memorandum that Congress had appropriated \$142+million, the funds FAA needed for the SST. He also reported favorably on the General Electric SST engine tests. He commented on Air Force sonic boom tests over certain cities and reported that Secretary of Transportation Boyd had taken over the Chairmanship of the Interagency Sonic Boom Coordinating Committee from Dr. Hornig of OST.

In January 1968, William M. Allen, President of Boeing, made a status report to Administrator McKee on Phase III of the SST contract. It suggested among other things that the first flight would probably come in 1971--as opposed to 1970, the original schedule.²⁴⁹

On March 15, 1968, FAA announced an SST program delay to allow design changes in the prototypes with first flight to come at the end of 1971, a year later than originally planned.²⁵⁰

The FAA amended its contract with Boeing on April 25, 1968, and reviewed agreements with General Electric to protect Government interests

²⁴⁹ Letter from General Maxwell, FAA, to R. W. Hale, January 29, 1968; attached copy of Allen (Boeing) letter to McKee, January 2, 1968; memorandum, Dr. Welsh to Vice President, February 2, 1968.

²⁵⁰ Memorandum, R. W. Hale to Dr. Welsh, March 15, 1968 (FAA Press Release).

and allow schedule delays up to one year.²⁵¹

²⁵¹Letter, General Maxwell, FAA, to R. W. Hale, April 30, 1968, with attached amendment to Boeing contract.

NATIONAL ARCHIVES AND RECORDS SERVICE
WITHDRAWAL SHEET (PRESIDENTIAL LIBRARIES)

FORM OF DOCUMENT	CORRESPONDENTS OR TITLE	DATE	RESTRICTION
Section	Section concerning space nuclear power. pages 119-124		A

FILE LOCATION

RESTRICTION CODES

- (A) Closed by Executive Order 11652 governing access to national security information.
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When the Nimbus B/SNAP 19 mission failed on launch from the Western Test Range on May 18 because of a launch-stage malfunction, the Council's Executive Secretary kept in close touch with the off-California recovery operations in the Pacific coastal waters. No evidence could be found that the coastal waters had received any nuclear contamination. This information was made available to information media.²⁷⁰

The Council followed up this disappointing failure with support for the initiation of another Nimbus B/SNAP 19 mission, which is scheduled for 1969.

NUCLEAR ROCKET PROGRAM

The National Aeronautics and Space Council has been a strong supporter of the NASA-AEC nuclear rocket program throughout the Council's history. In the spring of 1961 Vice President Johnson, as Council Chairman, was asked by President Kennedy to submit practical recommendations for accelerating the nation's space efforts. The Vice President's resulting recommendations for a strong space program included support of both

²⁷⁰

Memorandum from Dr. Welsh to the Vice President, May 18, 1968.

nuclear and chemical propulsion programs, as a combination of the two was essential to a leading role in space. The Vice President felt that nuclear propulsion would have an important role in space accomplishments in the future. The nuclear rocket effort had been under development since 1955 at a low level of effort.²⁷¹

The Council's Executive Secretary, Dr. Edward C. Welsh, notified the Joint Atomic Energy Committee of the Kennedy-Johnson Administration's decision to accelerate the nuclear rocket program (Project Rover).²⁷²

On May 25, 1961, President Kennedy announced to the Congress the national objective of a manned lunar landing in this decade and the accelerated development of the Rover nuclear rocket.

In June the Atomic Energy Commission and the National Aeronautics and Space Administration began contract negotiations with the Aerojet-General Corporation and the Westinghouse Electric Corporation for the development of an engine for the nuclear rocket (Project Rover). The Aerojet-General Corporation was to be responsible for the overall integration of the components into a workable system while the Westinghouse Electric Corporation had responsibility for developing the reactor.²⁷³

²⁷¹ Vice President Johnson's identical letter to Senator Clinton Anderson and Congressmen Chet Holifield and Mel Price, May 8, 1961.

²⁷² Dr. Welsh's letter to Mr. James T. Ramey, Staff Director, Joint Committee on Atomic Energy, May 24, 1961.

²⁷³ Letter from Mr. Howard C. Brown, Jr., Executive Assistant to AEC Chairman Seaborg, to Dr. Welsh, June 7, 1961.

NATIONAL ARCHIVES AND RECORDS SERVICE
WITHDRAWAL SHEET (PRESIDENTIAL LIBRARIES)

FORM OF DOCUMENT	CORRESPONDENTS OR TITLE	DATE	RESTRICTION
Narrative material	Material concerning the Bureau of the Budget discussions on the nuclear rocket program pages 127-128	1963	A

FILE LOCATION

RESTRICTION CODES

- (A) Closed by Executive Order 11652 governing access to national security information.
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The Council took note of the highly successful nuclear rocket development program which was being carried out by the NASA-AEC-industry team.²⁸⁰

In 1965 the Council noted a NASA-AEC plan to support the initiation of a large (5,000 megawatt) nuclear rocket engine in FY 1968, with a flight date ranging from 1973-76.²⁸¹

Early in 1967 AEC Chairman Seaborg outlined for Vice President Humphrey the benefits of initiating development of a 200,000 lb. thrust nuclear rocket engine in FY 1968.²⁸²

The discussion between the proponents and opponents of a Nerva II (200,000 lb. thrust) nuclear rocket development program was temporarily settled when the President sent a message to Congress on February 28, 1967, recommending such a program. Funds required by NASA for this effort would total \$91 million.

The President noted that the proposed nuclear rocket engine system would:

- permit us to almost double the weight of the present payload of the Saturn vehicle.
- increase our ability to maneuver spacecraft.
- be used in future manned landings and explorations of far distant planets.

²⁸⁰ Memorandum from Dr. Welsh to Budget Director, Kermit Gordon, attaching a Seaborg (AEC) - Webb (NASA) letter of October 2 to the President, October 6, 1964.

²⁸¹ Council staff memorandum of Dr. Welsh, August 10, 1965.

²⁸² Chairman Seaborg (AEC) letter to the Vice President, January 2, 1967.

The Joint Atomic Energy Committee, however, raised doubts about the move to a large Nerva II development program when the smaller version had not yet been fully developed. The Council staff noted the pro and con arguments for the Council Chairman. Congress finally rejected the Administration's request for a large nuclear rocket development program on economy grounds and also because this rocket had no firm mission.²⁸⁴

In 1968 the Council gave close support for the funding of a viable nuclear rocket program in the Congress. The Council's Executive Secretary met with both Chairman Anderson of the Senate Aeronautical and Space Sciences Committee and Chairman Miller of the House Science and Astronautics Committee in a continuing effort to coordinate support for the nuclear rocket program. The Executive Secretary also prepared substantive support papers on the advantages of a viable nuclear rocket program for the two Chairmen. The Vice President was kept fully abreast of this Council effort to be helpful to the Congress and he lent his strong support to it.²⁸⁵

On March 29 the President discussed with Chairman Anderson and Dr. Welsh the need for a strong nuclear rocket program. The Council staff has endeavored to follow closely the subsequent Congressional deliberations on the Nation's nuclear rocket program, giving support and advice to the Congress as appropriate. The Council received an oral briefing on the status

²⁸³ Not used.

²⁸⁴ Executive Secretary's memorandum to the Vice President, April 12, 1967.

²⁸⁵ Dr. Welsh's memorandum to the Vice President, March 15, 1968;
The Vice President's letter to Chairman Anderson, March 18, 1968.

of the nuclear rocket program on May 22, 1968, which noted the excellent technical progress which was being made.

MANNED ORBITING LABORATORY

In early 1963, the Office of the Secretary of Defense (OSD) undertook a detailed review of the Air Force's two manned space flight projects -- the in-development hypersonic Dyna-Soar glider, and the proposed orbital space station. Dr. Welsh and the National Aeronautics and Space Council staff worked closely with AFSC Commander General Bernard A. Schriever and the Air Force to define the base-line MOL Program, giving consideration to maneuvering, land-landing reentry systems as early as July 13, 1964.²⁸⁶

Examination of this manned proposal was made with the Bureau of the Budget, with Welsh present representing the Council. Also, the budgetary process brought the subject before the President, with Secretary McNamara making the presentations.

The DOD Secretary announced on December 10, 1963, that he was terminating the Dyna-Soar project and initiating development of the Manned Orbiting Laboratory (MOL). He stated that the MOL program would permit the Air Force to conduct military experiments involving manned use of equipment and instrumentation in orbit. It was estimated that the first manned flight could take place in about four years. In addition to assessing

²⁸⁶ Schriever letter of July 13, 1964, DOD File.

the utility of man to perform useful military missions in space, Mr. McNamara said, the MOL would provide a means for checkout, test, and evaluation of various items of experimental military equipment.

Beginning in early 1964, the Air Force initiated the pre-contract definition phase of the MOL project by awarding more than a dozen study contracts to industry. These included investigations of possible MOL experiments and detailed analyses of Gemini and Titan III. Meanwhile, the objectives of the MOL program had been broadened to include: (1) development of technology contributing to both manned and unmanned space operations; (2) development of manned capability to assemble and service large orbiting structures; and (3) other manned military space experimentation. The MOL also was to be used to investigate man's biological response during orbital periods of up to 30 days. To support this program, the President requested -- and Congress appropriated -- \$150 million in Fiscal Year 1966 for the MOL.

In the early formulation of MOL, Dr. Welsh consulted with NASA's Dr. Robert C. Seamans, General Schriever, and Dr. Albert Hall, DOD's Deputy Director of Space, to define security and integration where requirements of DOD and NASA cut across their respective areas of responsibility.²⁸⁷

²⁸⁷ Schriever letter dated September 15, 1965. Hall letter dated August 26, 1965. Brown letter dated July 23, 1965. Letter to Representative Holifield, dated June 17, 1965.

By early June, 1965, the possible experiment hardware for MOL had been narrowed to a general area. While the Air Force was preparing final recommendations for submission to OSD, members of the House Committee on Government Operations strongly recommended that the Department of Defense "without further delay commence full-scale development of a manned orbital laboratory (MOL) project." The committee said its recommendations were made "without prejudice to NASA's future requirements for manned space stations" but that the "compelling need of the moment is to overcome a military lag in space technology."

The committee apparently was reacting to a continuation of spectacular Soviet manned space achievements, in particular the space "walk" of Cosmonaut Leonov, who on March 18, 1965, spent nearly 10 minutes outside the orbiting Voskhod 2. On June 3, 1965, almost simultaneously with issuance of the House Government Operations Committee report, U. S. Astronaut Edward White surpassed Leonov's feat by spending 22 minutes in space outside his Gemini spacecraft.

In 1965, the Russians began to criticize the MOL Program, primarily for political propaganda purposes. Dr. Welsh worked with State and DOD to make it clear to the Vice President that the MOL Program did not require any change in U. S. policy in space.²⁸⁸

²⁸⁸ Memorandum dated October 20, 1965, from Dr. Welsh to Vice President Humphrey.

The successes of both the U. S. and Soviet manned space flight programs formed the backdrop against which Secretary McNamara during the summer of 1965 recommended to President Lyndon B. Johnson that the Defense Department proceed with the MOL project. After approving the proposal on August 25, the President announced at a White House news conference:

"After discussion with Vice President Humphrey and members of the Space Council, as well as Defense Secretary McNamara, I am today instructing the Department of Defense to immediately proceed with the development of a Manned Orbiting Laboratory.

"This program will bring us new knowledge about what man is able to do in space.

"It will enable us to relate that ability to the defense of America. It will develop technology and equipment which will help advance manned and unmanned space flight.

"It will make it possible to perform very new and rewarding experiments with that technology and equipment. "

President Johnson said that unmanned flights to test launching, recovery, and other basic parts of the system were to begin in late 1966 or early 1967. The initial unmanned launch of an equipped laboratory was scheduled for 1968, and should be followed later that year by the first five flights with two-man crews.

The President further announced the Air Force had selected the contractors to design and build the laboratory vehicle and to plan and develop the space experiments. The Titan IIIC booster would launch the laboratory into space and a modified version of the NASA Gemini capsule would be the vehicle in which the astronauts returned to Earth. The Chief Executive and Dr. Welsh

emphasized that the United States intended "...to live up to our agreement (in the United Nations) not to orbit weapons of mass destruction and we will continue to hold out to all nations, including the Soviet Union, the hand of cooperation in the exciting years of space exploration which lie ahead for all of us."

Almost simultaneous with the President's announcement, the Air Force established a special MOL Program Office in the Pentagon which reported directly to the Secretary of the Air Force. General Schriever, Commander of AFSC, was named the first MOL Program Director. Dr. Welsh was closely involved in defining the MOL Program for the Office of the Vice President, as stated in the questions and responses from Harold Brown, Secretary of the Air Force; Dr. Albert Hall of DOD, Deputy Director (Space); and James Webb, Administrator of NASA, dated August 3, 1965, August 12, 1965, and July 29, 1965, respectively.

The intention to move the MOL launch from Florida to California was discussed in the open literature. Dr. Welsh suggested that all facts be collected before the Vice President took any position.²⁸⁹

While contract definition studies proceeded during 1966, the Air Force moved ahead toward its first test launch of MOL hardware -- a refurbished NASA Gemini vehicle, whose heat shield had an access hatch cut into it as would be done later for MOL flights. On November 3, 1966, a Titan III

²⁸⁹ Memorandum to Vice President Humphrey from Dr. Welsh, February 16, 1966. Memorandum to the Vice President from Dr. Welsh, February 25, 1966.

boosted the Gemini to an altitude of 125 miles to test whether the modified heat shield could withstand reentry temperatures. Traveling 17,500 miles per hour, the spacecraft followed a 5,500-mile trajectory and landed seven miles off target in the Atlantic, where it was recovered by the USS LaSalle. The test, a complete success, was a major step forward in the MOL Program. The Air Force selected twelve astronauts. Vice President Humphrey was kept informed on the selection and training process to qualify the astronauts and was briefed on the mission and program requirements. He received a thorough but informal review of the program, including the introduction of seven of the Air Force pilots to the Vice President.²⁹⁰

Then, on July 23, 1968, Dr. Welsh represented the Vice President in meeting a new group of MOL astronauts and getting an up-to-date briefing from them and their program director.

At a National Aeronautics and Space Council meeting on February 14, 1968, the AAP/MOL redundancy was a major subject of discussion. "The basic question that needs to be answered for future Earth-orbiting systems is the ever-present statement that the Apollo Applications and the MOL Programs are redundant." To answer this basic question that continually reappears in Congress, one must know the specific plans, schedules and common technology needs of the Earth-orbiting AAP (wet-dry-large station) and the future second-generation MOL Program.

²⁹⁰ Memorandum to the Vice President from Dr. Welsh, May 11, 1967.

That the two programs as configured through 1972 are not redundant was described in a classified draft report prepared by the NASC staff.²⁹¹

Both NASA and DOD have made their respective technology available to the other, and it would appear that the current Apollo Applications and MOL Programs have a maximum of ~~capability~~ and a minimum of redundancy. This is of major interest to the Council.

Space Rescue

The National Aeronautics and Space Council has examined both directly and through its staff the problems and alternative solutions regarding the development of space rescue capabilities. Initial efforts were begun late in 1964, with a recommendation that an ad hoc space rescue committee be formed,²⁹² with Department of Defense and NASA participation, to be chaired by a member of the Council staff and including other agencies as required. A need was seen to formulate and present a unified space rescue program.²⁹³

The Vice President was appraised of these early efforts and agreed that the idea had merit and studies should be initiated.²⁹⁴

²⁹¹ Staff memorandum: Complementary Applications of MOL Programs, dated October, 1967.

²⁹² Memorandum for Welsh from Konecci, December 23, 1964.

²⁹³ Letters to DOD and NASA from Welsh on February 10, 1965, and to AEC and State from Welsh on February 11, 1965.

²⁹⁴ Memorandum for the Vice President from Welsh, February 12, 1965.
Note to Norman Sherman from the Vice President, February 12, 1965.

Rather than convene a formal committee, it was agreed by the various NASC members to continue additional studies on the subject.²⁹⁵

The subject of space rescue continued to receive informal study and attention until May of 1965 when the Martin Company presented a proposal for development of operational space-rescue capability over a 10-year period.²⁹⁶

The Chairman of the Space Council was also appraised of these studies and a plan to present the proposal to the President.²⁹⁷

The National Aeronautics and Space Administration felt that the Martin Company proposal was somewhat premature and recommended that no formal program be formulated until Gemini flights had been flown, and space rendezvous and docking actually accomplished.²⁹⁸

The Executive Secretary of NASC expressed his views to the House of Representatives on a number of space developments he foresaw within the 1970's, including "development of operational space rescue capability for astronauts, as well as for repair of orbiting spacecraft."²⁹⁹

²⁹⁵ Letters to DOD, NASA, AEC, and State from Welsh, February 19, 1965.

²⁹⁶ Note to Koneccki from Welsh, May 10, 1965; letter to President Johnson from the Martin Company, May 14, 1965.

²⁹⁷ Memorandum for the Vice President from Welsh, May 17, 1965.

²⁹⁸ Memorandum to the President from Welsh, May 21, 1965; memorandum to the President from Webb, June 2, 1965.

²⁹⁹ Memorandum to Representative Teague from Welsh, May 16, 1966.

Subsequently, the Subcommittee on NASA Oversight expressed interest in space rescue and arrangements were made for the NASC staff to participate in space rescue discussions with Congressional staff members, Dr. Konecci being named as the NASC staff point of contact.³⁰⁰

Dr. Welsh's views to Congressman Teague were given wide distribution and drew comments, including one from Dr. Harry Hess of Princeton University (Chairman of the Space Science Board), who argued that a "rescue system for personnel would be so expensive --- I would rather see part of the funds go toward making space flight safer."³⁰²

The NASC Executive Secretary agreed that major attention should be devoted to obtaining high reliability so as to reduce the likelihood of requiring space rescue.³⁰³

Unmanned Lunar Program

Early efforts of the NASC to promote unmanned lunar exploration began with the Centaur launch vehicle program. Early in 1962 it was recognized that the Centaur Program was an essential part of the Nation's lunar and planetary

³⁰⁰ Letter to Congressman Teague, Chairman of the Subcommittee on NASA Oversight, from Welsh, May 19, 1966.

³⁰¹ Not used.

³⁰² Letter to Welsh from Hess, September 12, 1966.

³⁰³ Letter to Hess from Welsh, September 13, 1966.

exploration programs. A request was made to Vice President Johnson to establish a DX priority for the Centaur Program.³⁰⁴

Subsequent efforts by the Executive Secretary of the NASC to expedite the NASA request followed.³⁰⁵

A meeting of the Council was called on November 2, 1962. As a result of this meeting, it was decided to accord the Nation's highest priority (DX) to the program.³⁰⁶

Subsequent participation of the NASC in the unmanned lunar program has kept the President and the Vice President appraised of the status and progress being made by both the U. S. and USSR programs, and of plans for U. S. post-Apollo programs.³⁰⁷

Following the first successful Ranger mission (Ranger VII), arrangements were made to provide photographic results to the Heads of State and foreign governments and the United Nations.³⁰⁸

Still later, the NASC Executive Secretary briefed the Vice President on the National Academy of Science's recommendations for post-Apollo lunar and planetary explorations.³⁰⁹

³⁰⁴ Letter to the President from Webb, October 30, 1962.

³⁰⁵ Memorandum for the President from Welsh, October 31, 1962.

³⁰⁶ NASM No. 207, "Assignment of Highest National Priority to Project CENTAUR," November 28, 1962.

³⁰⁷ Memorandum for the President from Welsh, Subject: "Lunar Exploration," dated June 10, 1964.

³⁰⁸ Memorandum to the President from Welsh, July 31, 1964.

³⁰⁹ Memorandum to the Vice President from Welsh, January 18, 1966.

Many times in 1966 and 1967 the NASC "furnished briefing materials, including space photographs, for appropriate use in connection with the visits to Washington of high officials of other nations."³¹⁰

Throughout 1967, a year in which the U.S. program had numerous successful unmanned lunar flights, the Vice President was informed of the results of these efforts.³¹²

In 1967, efforts were continued to promote international cooperation between the U.S. and USSR, particularly in unmanned lunar programs.³¹³

The NASC staff continued to follow closely NASA plans for post-Apollo lunar exploration through various meetings and discussions.³¹⁴

At the conclusion of the U.S. Ranger, Lunar Orbiter, and Surveyor Programs, summary cost data were prepared by the staff.³¹⁵

³¹⁰ NASC Annual Report(s) to the President 1966, p. 10; 1967, p. 9.

³¹¹ Not used.

³¹² Memo to the Vice President from Welsh, August 10, 1967; memorandum to Col. Paffel from Welsh, October 2, 1967.

³¹³ Letter to Jim Webb (NASA Administrator) from Welsh, May 26, 1967.

³¹⁴ Memorandum for Welsh from Eckman, October 24, 1967.

³¹⁵ Memorandum to Welsh from Eckman, February 9, 1968; memorandum for Welsh from Eckman, March 7, 1968.

Unmanned Planetary Programs

The U. S. unmanned planetary program began with an attempt to fly-by the planet Venus in 1962. The Vice President was kept fully informed of launch preparations by the Executive Secretary, and of the results of the successful flight.³¹⁶

The next U. S. planetary exploration attempt came in 1964 with the launch of Mariner IV towards Mars. The results of this successful planetary fly-by, which resulted in our first close-up photographic observations of Mars, created worldwide interest.³¹⁷

Immediately, plans were made for Presidential distribution of the first television photographs of Mars to Heads of State of foreign governments.³¹⁸

Enthusiasm for planetary explorations continued with proposals for a large-scale Mars exploration called the Voyager Program. Early Voyager plans called for utilization of the Saturn IB/Centaur launch vehicle; subsequently NASA announced its intent to utilize the Saturn V launch vehicle. This choice was questioned by the NASC Executive Secretary and staff.³¹⁹

³¹⁶ Memo to the Vice President from Welsh, July 17, 1962, memo to George Reedy from Hale, December 12, 1962.

³¹⁷ Memo for the Vice President from Welsh, July 22, 1965.

³¹⁸ Memo for the President from Secretary Rusk, July 26, 1965; memo to Welsh from Charles E. Johnson, NSC, July 28, 1965.

³¹⁹ Letter to Robert Seamans, NASA Associate Administrator, from Welsh, October 21, 1965; letter to Welsh from Robert Seamans, December 2, 1965.

Although these plans (the Voyager Program) had to be postponed from 1969 until 1971 until 1973 because of budgetary considerations, two smaller Mariner programs were planned in their stead.³²⁰

The position of the National Academy of Sciences on lunar and planetary exploration was presented to the Vice President by the Executive Secretary early in 1966.³²¹

The U. S. program plans, in fact, did change later in 1966 due to budgetary, scientific, and technical considerations.³²²

During 1966 the NASC was asked to render an opinion upon U. S. ratification of an International Treaty Governing Exploration of the Moon and Other Celestial Bodies.³²³

In 1967, the United States launched a successful Mariner V spacecraft on a Venus fly-by. Again, Dr. Welsh followed progress of this closely and kept the Vice President informed.³²⁴

With the successful Soviet Venus IV probe, which landed on the planet October 17, interest in Venus exploration grew even more. The Executive

³²⁰ Memo for the Vice President from Welsh, December 22, 1965.

³²¹ Memo to the Vice President from Welsh, January 18, 1966.

³²² Memo to Welsh from Sheldon, April 18, 1966; note to the Vice President from Welsh, April 18, 1966.

³²³ Memo to the Vice President from Welsh, April 5, 1966 (CONF.).

³²⁴ Memo for the Vice President from Welsh, June 14, 1967, and also note to the Vice President from Welsh, August 2, 1967.

Secretary kept the Vice President closely informed of the results of both the U. S. and USSR probes as they became available.³²⁵

Subsequently the Executive Secretary urged a special call for U. S. /USSR exchange of data gathered from their respective probes.³²⁶

During 1967 the NASC staff kept fully aware of the NASA planning for unmanned planetary programs and performed several analyses of these plans as they evolved.³²⁷

Toward the end of 1967, the National Academy of Sciences' Space Science Board made further suggestions to NASA with respect to changes in the NASA post-Apollo programs, and the Council Chairman and Executive Secretary were kept fully informed of the Board's position.³²⁸

In 1967 the NASC staff drew together and summarized the results of both the U. S. unmanned lunar and planetary programs.³²⁹

During 1967 and 1968 the NASC staff participated in discussions and arguments related to the subject of contamination of extra-terrestrial bodies.

³²⁵ Memos to the Vice President from Welsh, October 18, 1967; note to Tom Johnson (White House) from Welsh, October 18, 1967; memo for the Vice President from Welsh, October 19, 1967.

³²⁶ Memo for the Vice President from Welsh, October 30, 1967.

³²⁷ Memo to Welsh from Eckman, July 25, 1967; memo for Welsh from Eckman, August 15, 1967 (revised September 5, 1967).

³²⁸ Memo for the Vice President from Welsh, November 7, 1967.

³²⁹ 1967 NASC Annual Report to the President, pp. 134-135, "Historical Summary -- Unmanned Lunar and Planetary Programs."

The NASC staff attended two formal meetings on the subject sponsored by the National Academy of Sciences.³³⁰

The NASC staff also participated in discussions with NASA on alternate planetary programs, changes prompted by tight budgetary restrictions in Fiscal Year 1968 and those anticipated in 1969.³³¹

Meteorological Satellites

Vice President Johnson, as Chairman of the National Aeronautics and Space Council, laid special emphasis on the development of meteorological satellites. He saw that this new mode of acquiring information on the world's weather had universal appeal to the man-in-the-street which other more esoteric scientific programs often lacked. In a meeting with the Council staff he requested that high priority be given to supplying him personally with information on all new developments in the field.

Accordingly, Council staff papers were prepared dealing with "Weather Satellites, Their History and Significance," which underwent revisions and updatings.³³²

In April 1963, an editorial entitled "Weather and the Future" by Vice President Johnson, appeared in Astronautics and Aerospace Engineering.

³³⁰ Memo for Welsh from Eckman, May 18, 1967; memo for Welsh from Eckman, April 15, 1968.

³³¹ Memo to Welsh from Eckman, February 29, 1968; memo for Welsh from Eckman, February 6, 1968.

³³² Weather Satellites, revised April 1, 1963; also Weather Satellites, Their History and Significance, revised July 2, 1963.

Based on research by the Council staff, it attracted widespread attention in the public media by its estimates of cost savings, assuming an accurate prediction of weather activity only five days in advance. These were set at one-half the following rate for the United States alone:

- ... \$2-1/2 billion a year in agriculture.
- ... \$45 million in the lumber industry.
- ... \$100 million in surface transportation.
- ... \$3 billion in water resource management.
- ... \$75 million in retail marketing.

Close liaison was established at the outset by members of the Council staff and specialists in NASA, Defense, and the Weather Bureau who had responsibilities for the development and operation of meteorological satellites.

A Council staff member attended the First International Meteorological Satellite Workshop held November 13-22, 1961, at NASA Headquarters.

On November 22, 1965, Dr. Welsh sent a memorandum to Vice President Humphrey urging priority interest in synchronous weather satellites. This interest was stressed repeatedly by the Vice President at subsequent Council meetings.

In addition, in 1965, weekly conferences were begun between members of the Council staff and the staff of the National Meteorological Satellite Center at Suitland, Maryland, to develop materials in this field of such special interest to President Johnson.

Weather satellite photographs from Tiros, Nimbus, and the ESSA series, and from synchronous satellites such as the ATS series, were selected for special presentation by the President to visiting Chiefs of State, or Prime Ministers. These proved to be particularly useful mementoes for presentation at official luncheons where small gifts were customarily exchanged between host and visitor.

In addition to NASA and Weather Bureau/ESSA contacts, Council staff members maintained liaison with the DOD Joint Meteorological Satellite Projects Office, and were kept apprised of Defense programs in this area.

Fragments

In late February, 1962, four pieces of the Atlas 6 booster which orbited Astronaut John Glenn in Friendship 7, on February 20, 1962, were found in remote sections of Cape Province, Union of South Africa, and pieces thought to be from an Atlas booster were recovered late in March in Brazil.

The Washington Post published an article about this on April 26, 1962, and as a result the government had a new public relations problem to cope with.³³³

After discussions at staff level between the State Department and NASA, those agencies drafted a statement which designated NASA as the agency responsible for obtaining, analyzing, and identifying any fragments of space vehicles which fall on the United States. NASA was made the coordinator of all Government and private agencies involved.

³³³ Memorandum and reference attachment from Franklyn W. Phillips (Special Assistant to the NASA Administrator) to Dr. Welsh, April 30, 1962.

NASA sent this jointly prepared statement to the Executive Secretary of the Council with the request that it be issued by the Council to all Government agencies.³³⁴

Dr. Welsh called a meeting on October 17, 1962, of representatives of AEC, DOD, Justice, NASA, and State, and the Council staff.

At the meeting, NASA, DOD, and other agencies described the independent actions each took when fragments were discovered, and it was agreed that an internal coordinating document should be drafted and that a public announcement of Government responsibility should be prepared separately.³³⁵

The Council staff drafted two papers in keeping with the suggestions made at the meeting of October 17, and Dr. Welsh sent copies of these drafts to the agency representatives by memorandum dated October 22, 1962. When the comments had been received from all the agencies, revised documents were prepared and transmitted by Dr. Welsh to the Council members on November 6, 1962, asking for concurrence. Subsequently, after concurrence had been obtained from the Secretary of State and Chairman of the AEC, the Secretary of Defense sought a delay pending consideration by the U. S. Intelligence Board (USIB).³³⁶

³³⁴ Memorandum from Marvin Robinson (Deputy Director, Office of International Affairs, NASA) to R. W. Hale, with the reference "statement" drafted by NASA, September 21, 1962.

³³⁵ Memorandum for Record, Dr. Charles S. Sheldon, NASC, October 22, 1962, which is a full report of the meeting of October 17, 1962.

³³⁶ Letter, Dr. Fritsch to Dr. Welsh, November 8, 1962, Letter, U. Alexis Johnson to Dr. Welsh (C), November 18, 1962. Memorandum, Margaret Quill to R. W. Hale, quoting phone call from Dr. Schuette, November 20, 1962.

Dr. Welsh and members of his staff, under his instructions, made direct efforts to talk with high-level officials in CIA, Defense Intelligence Agency, and DOD to get a decision on the subject of agency responsibility for dealing with "fragments."

On January 7, 1963, Dr. Welsh wrote to Secretary McNamara, explaining the background of the Council's activities regarding responsibility and procedure on space vehicle fragments. Dr. Welsh noted that no progress had been made since November 20, 1962, and he asked for assistance in getting appropriate and prompt consideration.

On January 15, Secretary McNamara answered Dr. Welsh, explaining that the delay was primarily due to disagreement in the intelligence community and promising a decision in the near future.

On March 1, Roswell Gilpatric (Deputy Secretary of Defense) sent to Dr. Welsh a revised classified paper which, he explained, would enable DOD to carry out its responsibilities. The paper as revised (C) by DOD was transmitted to the original members of the drafting committee by Hale on March 4. Each agency's representative was asked to notify Hale if the changes affected the overall approval already received from those agencies.

On March 4, Solis Horwitz of Defense told Hale by phone that Deputy Secretary Gilpatric would talk to CIA Director John A. McCone and expedite intelligence approval of the DOD paper.³³⁷

³³⁷ Memorandum for Record, R. W. Hale, March 4, 1963 (record of Phone call).

On April 2, 1963, Horwitz called Welsh to tell him that no USIB or CIA clearance had been arranged as yet for the DOD draft document.

On April 9, Arnold Frutkin (NASA) in a letter to Welsh suggested some changes in the DOD draft which had been sent to agencies by Hale on March 4. With his letter he transmitted a revised NASA paper entitled: "Guidelines for Interagency Handling of Space Vehicle Fragments." (C)

On May 22, Welsh and Hale visited Horwitz in his Pentagon office and learned that there had been no settlement between CIA and DIA.

On May 31, Dr. Welsh wrote a memorandum to McCone requesting that the Defense draft be considered by CIA and the matter given prompt attention by USIB.

On June 24, Dr. Welsh wrote a follow-up memorandum asking to be advised of actions taken or plans regarding discovered fragments.

On July 26, McCone in a memorandum to the Executive Secretary, NASC, referred to the memoranda of May 31 and June 24, and said that the intelligence community could not give concurrence at this time on the proposed guidelines. He promised to explore the problem and communicate further.

In August 1963, the House Committee on Science and Astronautics was considering H. R. 29, "to provide for the securing of custody and disposition by the U. S. of missiles, rockets, earth satellites, and similar devices adapted for military uses and other purposes."

Webb, with the approval of the Bureau of the Budget, wrote Chairman George P. Miller of the House Committee on August 27 that he opposed H. R. 29, but he said in the letter that discussions were currently being held in the Executive Branch to determine responsibility for dealing with fragments.

On October 24, 1963, Arnold Frutkin (NASA) called Dr. Welsh and said that NASA would like to see action pressed to designate NASA as the agency responsible to deal with fragments.

Dr. Welsh called a meeting of the responsible agencies on November 6, 1963. His memorandum was sent to Council members as well as McCone, McGeorge Bundy (Special Assistant to the President), and Dr. Jerome Wiesner (Director, Office of Science and Technology). It noted the long history of Council staff consideration as well as the current legislative program and Mr. Webb's reply.

The meeting was attended by representatives of all the invited agencies, each expressing the separate viewpoints of his agency. The CIA representative said his Director had the responsibility of coordinating all involved with their activities. The Chairman concluded the meeting by advising that the Council staff would redraft the previous papers in the light of the various alternatives suggested.³³⁸

By letter dated November 27, 1963, Huntington D. Sheldon (CIA) notified Dr. Welsh that McCone was willing to have the USIB consider the problem.

³³⁸ Memorandum, Mr. Hirsch to Dr. Welsh, "Highlights of Meeting November 21 -- Fragments" dated November 26, 1963.

On April 6, 1964, Robert Packard (Director, SCI, Department of State) sent to R. W. Hale copies of four internal State memoranda which disclosed the Department's uneasiness about possible difficulties with re-entered fragments or pieces of U. S. spacecraft falling on foreign territory.

On June 1, 1966, Frutkin (NASA) advised Dr. Welsh by memorandum, and with it provided three photographs of a metal sphere for positive identification and analysis. NASA felt it likely to be a helium pressure sphere, part of the service module AS-201.

On November 7, 1966, William Hausman (NASA) wrote a letter to Robert Packard (Director, SCI, Department of State) about the fragment found at that time in Wisconsin. Hausman sent a carbon copy of his letter to Dr. Welsh for information.

On November 23, 1966, Frutkin wrote Welsh further about the fragment found at Manitowoc, Wisconsin. On instructions from Welsh, Hale called Carl Duckett (CIA) to remind him that CIA had accepted responsibility for proper handling.

In February 1968, a new problem of interagency coordination was resolved in Washington by clearing among State, Defense, and NASA new instructions which were issued as a circular telegram (#114584) to all embassies. DIA cleared that telegram for Defense and in July, because of some difficulties overseas, DIA was revising its Field Instructions to conform with the joint telegram of February 1968.

In mid-July 1968, NASA and State officials involved in such matters felt that the current coordinating efforts were adequate and effective.

The same officials seemed to think that things should move smoothly both at home and abroad with the coming into effect of the UN "Assistance and Return Treaty" which President Johnson sent to the Senate for ratification on July 15, 1968.³³⁹

Propulsion

The two major actions taken by the Council in the field of propulsion were the recommended assignment of the highest national priority rating to the Apollo-Saturn system, at its meeting of March 21, 1962, and a similar recommendation for Centaur at its meeting of November 2, 1962. Both of these actions were subsequently approved by the President.

In addition, the Council at its meeting of July 12, 1962, discussed the merits of the Earth orbital versus the Lunar Orbit Rendezvous mode for the Apollo lunar landing mission.

The Council's view was that NASA as the agency with action responsibility for the program should be in a position to make the final determination.

In a memorandum to Vice President Johnson, dated September 18, 1962, Dr. Welsh listed alternatives, and indicated that NASA studies had recommended in favor of the L. O. R. mode. He gave the contrary views of

³³⁹ Memoranda for Record: R. W. Hale: July 17, 1968: re call to Don Morris, NASA; July 18, 1968: re call to Herb Reis, State Department; July 18, 1968: re call to Don Bowie, State/SCI.

Dr. Wiesner, the President's Science Adviser, and gave his own conclusion that supported the L. O. R. mode.

As a matter of record, the Lunar Orbit Rendezvous mode was initiated by NASA on August 30, 1963.

Comparative Statistics on United States and Soviet Space Flight

President Johnson requested in January 1964, that he be supplied a weekly newsletter, which would summarize principal space events. The Executive Secretary of the National Aeronautics and Space Council drafted such a letter each week on Friday, following consultation with his staff which contacted various agencies and developed other sources to assure appropriate coverage. A copy of the letter was also supplied to the Vice President, as Chairman of the Council.

Among the ingredients of the letter was a unique box score of the number of payloads launched by each nation, cumulatively from the first of the year, and compared with the corresponding data of the year before. Simple as the measure was, it gave some sense of direction in the two major space programs.³⁴⁰

The responsibilities of the Council staff grew over a period of time in the area of drawing both public and White House internal comparisons between the two major world space programs. The reasons were that neither the Department of Defense nor the National Aeronautics and Space Administration had over-all responsibility for the whole picture, so that

³⁴⁰ Memoranda for the President, subject: Space and Aeronautics Activities, 1964-1968.

the Council staff was the logical place to consolidate certain kinds of data always kept in timely form on the total U. S. effort. Likewise, the Intelligence Community seemed far better supplied with Soviet flight data than with U. S., so that it could not make comparisons. The Council staff was thus frequently in the best position of any Federal agency to provide authoritative comparative data.

Sometimes such comparisons went into speech drafts for the use of the President or the Vice President. Other times speeches on appropriate public occasions using such comparative data were given by Dr. Welsh or some member of his staff. These Council comparisons came to be relied upon so much that it was common for the staffs of other Federal agencies to send any brief statements of comparison drafted within their own agency for review by the Council staff. The press also found it useful to call Dr. Welsh on the great majority of news occasions with a potential for U. S. -Soviet space comparisons.

Not only was there a current and ad hoc use of international comparative data from the Council staff, but each year in the annual report of the President to the Congress on aeronautical and space activities, there were usually carefully worded statements of comparison.

The Council staff received useful support from other agencies of Government in its work on drawing space comparisons. Various flash report systems were set up from Defense, CIA, and NASA. Briefings and

discussions were held periodically between the Council staff and these agencies. Often these were classified, but were extremely useful for background and perspective in preparing completely unclassified statements of comparison which might later be issued by the Council staff. There was also a feedback to originating agencies to improve reporting systems. This included some changes of procedure at NORAD, following staff visits there, and in reporting forms and internal records at CIA. Another form of feedback came in briefings by Council staff to other Federal agencies. For example, these included briefings of Mr. Webb at NASA, Mr. Edward R. Murrow at USIA, and of the Policy Staff of the State Department. Dr. Welsh also was called on to address seminars at the Defense Department, Navy, and Air Force, on space comparison subjects. In addition, service was performed by checking statements on space for the Voice of America or USIS whenever these would be strengthened by exposure to such special information.

A sidelight on the development of international comparisons was the task of developing definitions of spaceflight. It seemed a characteristic of the records on flights that no two agencies or publications were reporting the same number of flights or payloads, and whether these were successes. The Council staff encouraged agreement on consistent use of carefully specified, published definitions in this regard so that it was possible to explain rationally any differences which might exist among agencies. These were

spelled out in the footnotes of the appendix tables each year in the President's report to the Congress on aeronautical and space activities. The definitions are of necessity arbitrary in some degrees, but there were sound reasons for their use at national level.³⁴¹

Thus NASA tends to judge successes and failures by its own assessment of whether the major mission objective was attained. The Department of Defense rarely reports any mission failure since most missions are not disclosed in the first place. The counts used by the Council staff therefore are predicated solely on whether or not the flight reached orbit, or escaped when so intended.

Similarly, payloads were defined as functional objects intended to operate as separate physical entities in space, whether in fact they did separate or not. This was necessary because in a few cases the fact or failure of two payloads to separate was not announced, or two objects once separate were then joined. There were also the problems of single payloads which later were fragmented through accident. Some agencies have tended to report each fragment as a payload, but this introduces unmanageable problems on a world-wide counting basis.

Earth orbital and escape missions were also defined in such a way that flights to the Moon, planets, or around the Sun were counted as escape

³⁴¹ Annual Reports to the Congress by the President on U. S. Aeronautics and Space Activities.

missions, even if a very occasional lunar mission was really still in orbit around the Earth (termed barycentric). Other missions which flew as far away as the Moon, but not passing near it, were left in the Earth orbit category simply because they were neither lunar nor planetary, and no useful line such as lunar distance seemed to be a reasonable division between various Earth-centered eccentric orbits. These definitions used by the Council staff were particularly useful when applied not only to a mix of U. S. flights of different agencies, but also to foreign flights which also lacked sufficient public information to permit a finer categorization. These standards established by the Council staff proved sufficiently useful that it has not been uncommon for other agencies to call the Council staff to get an agreed-upon count even for its own agency's space flights. The definitions were not arrived at without considerable testing over a period of several years. They serve certain gross purposes, and the staff maintains a variety of finer breakdowns in private worksheets which permit a rapid regrouping into new categories to test the validity of records maintained elsewhere.

In addition to this type of statistical comparison, the Council staff prepared and updated each year beginning in 1965, a listing of major "space firsts." This is a tabulation, grouped into significant categories, of space events which were first accomplished by the U. S. or the USSR as the case might be. This comparison has drawn world-wide attention.

Public Information Policy

When the Kennedy Administration took office in January, 1961, the official policy governing public information on U. S. space activities was more than two years old. It became apparent that a fresh look at this aspect of the space program was in order.

The Executive Secretary called a meeting on May 19, 1961. Those present included representatives of USIA as well as Council member agencies. Dr. Welsh opened by noting that Vice President Johnson wanted the topic of public understanding and information explored. The intent was not to decide on a policy at that point, but to collect expert advice. As background, Welsh circulated copies of a paper containing excerpts from recent Presidential statements.

He also gave each participant a paper listing pros and cons of open publicity and prior announcements of launchings. One disadvantage, for example, was that national prestige was damaged more by a failure preceded by a publicity buildup; one advantage was that the open approach contrasted favorably with the Russian policy of secrecy.

It was agreed that the Government should try to preserve the net advantages in national prestige that accrued from "open" handling of the Mercury Redstone 3 mission, while playing ensuing shots in the same series in a lower key. It was likewise agreed that, except in special cases, military launchings would continue to be conducted without prior announcement; also,

that announcement of shots involving nuclear energy should be coordinated with, and originate from, the White House. The meeting ended with a consensus that a coordinated over-all policy, including a broad public education effort should be established.³⁴²

International political aspects of the information problem surfaced a few days later, when a State Department official informed Dr. Welsh that his agency had recently requested NASA to provide State with an opportunity to review information plans and press releases before they were given to newsmen. This, he said, was "necessary to ensure that friendly nations continue to cooperate in U. S. space projects and to achieve the best possible public affairs effect overseas." He added that State planned to work closely with DOD on such matters.³⁴³

At Dr. Welsh's request, the State Department official sent him copies of letters previously sent to NASA in this connection. It developed that State's Bureau of Public Affairs had been designated as the central point for contact with NASA.

That summer, Vice President Johnson took further interest in the information question. He sent Dr. Welsh a memorandum suggesting that the Council enlist the cooperation of agencies to produce a series of comprehensive

³⁴² R. W. Hale summary report, May 19, 1961.

³⁴³ Letter to Dr. Welsh from Howard Furnas, Deputy Special Assistant to the Secretary of State, May 25, 1961.

reports to the public on the actualities of the space program. "It seems to me," the Vice President wrote, "that much available information has been lost upon the public because it has been presented in bits and pieces rather than in coherent form. People have asked me, for example: 1) for a comparison of USSR and U.S. space achievements; 2) why the U. S. plans to send men to the Moon; 3) why are communications satellites important; 4) what effect can outer space satellites have on the weather; and 5) what are the military implications of outer space exploration?"

"If you agree that providing lucid answers... would be a public service," the Vice President concluded, "I would appreciate your cooperation."³⁴⁴

Dr. Welsh replied that he fully concurred with the desirability of such an undertaking, and believed the Vice President's list of questions was an excellent basis for such a program. "If the necessary information is assembled and phrased into clear, non-technical language, I would think a series such as 'The Vice President Reports on Space' could be worked out," he said. He suggested the names of two well-known authors who might be enlisted in the project, and said he would start to get the required information on one or two of the topics brought up in the Vice President's memorandum.³⁴⁵

³⁴⁴ Vice President's memorandum to Dr. Welsh, July 26, 1961.

³⁴⁵ Dr. Welsh's memorandum to the Vice President, July 29, 1961.
As a matter of record the well-known author, Pat Frank, was employed as a consultant from 9-29-61 to 12-11-61.

He then wrote to Dr. F. W. Reichelderfer, Chief of the U. S. Weather Bureau, asking him to name someone in the Bureau who could draft some suitable material on meteorological satellites.³⁴⁶

On February 20, 1962, Lt. Col. John Glenn successfully flew the first orbital space mission in the U. S. program. Predictably, the news media's coverage centered on Glenn himself and tended to pay little attention to the other individuals and to the organizations that had made the flight possible. To attempt to restore some perspective, Dr. Welsh prepared and issued to the press a statement honoring Glenn but pointing out the role of the President, Congress, NASA, DOD, and private contractor experts and technicians.³⁴⁷

In the fall of 1962, a controversy arose regarding the release by U. S. Government sources of information on Soviet launches. A Newsweek magazine correspondent wrote to Dr. Welsh complaining that tracking information on such launches, which had been appearing in the Satellite Situation Report issued biweekly by NASA's Goddard Space Flight Center, was no longer being published. The writer noted that there seemed to be no grounds for cutting off the flow of this information for reasons of military classification, since the same equipment had been used to track earlier Soviet spacecraft that had been reported publicly. How, he asked, under the new circumstances, was the press to keep the public informed of the relative rates of progress of the U. S. and Soviet programs?³⁴⁸

³⁴⁶ Dr. Welsh letter to Dr. Reichelderfer, August 4, 1961.

³⁴⁷ Dr. Welsh's press statement, February 20, 1962.

³⁴⁸ Letter to Dr. Welsh from Henry Simmons, Newsweek, Oct. 16, 1962.

Dr. Welsh sent a copy of the letter to NASA Administrator Webb, together with a letter in which he urged a "useful response," and possibly some improvement of the situation.³⁴⁹

Webb replied by letter, explaining that NASA was not itself equipped to track all launches and relied on DOD for information on Soviet shots. DOD policy regarding release of information on Russian launchings had changed several times, he said, and the current DOD practice was to withhold information on Soviet satellites even when they were announced in Moscow. Beyond this, he noted, DOD also withheld announcement of some U. S. military launches. Consequently, he said, NASA had no recourse but to omit such data from the Satellite Situation Report.³⁵⁰

Dr. Welsh promptly wrote to Assistant Secretary of Defense (Public Affairs) Arthur Sylvester, recounting the situation and asking whether Sylvester had any ideas for improvement.³⁵¹

At this point, a Council staff expert wrote for Dr. Welsh a memorandum in which he concluded that there should be "straightforward" reporting of all objects attaining orbit, as there had been before September 1, and said that in his opinion it would not jeopardize national security.³⁵²

³⁴⁹ Dr. Welsh's letter to Webb, Oct. 17, 1962.

³⁵⁰ Webb letter to Dr. Welsh, Nov. 4, 1962.

³⁵¹ Dr. Welsh's letter to Sylvester, Nov. 5, 1962.

³⁵² Memorandum to Dr. Welsh from Dr. Charles Sheldon, Council staff, Nov. 9, 1962.

On November 17, Dr. Welsh sent the Vice President a memorandum in which he asked why the U. S. should help the Soviet propagandists by classifying information on their unsuccessful launches, and, further, why the U. S. should not announce all of its own military, as well as NASA, launches? Such a policy would present a less confused picture, he argued, and discretion could be exercised within such a policy to protect security where required.

The Vice President said he would like to have a draft recommendation to that effect. The Council staff prepared two drafts. The first stated as its conclusion that the Satellite Situation Report should continue to list all U. S. space launches, with their orbital parameters, if those came from existing launch sites. It further recommended that the Government return to its earlier policy of giving names to all announced space vehicles, rather than giving them a "sinister-sounding 'secret' label."

The second draft, "Public Information Policy on Soviet Space Launchings," recommended that Russian launchings routinely announced by the USSR and confirmed by U. S. tracking once again be listed in the Satellite Situation Report. It also urged that objects tracked by the U. S. but not announced by the Soviets be listed in the Report "if they show at least certain threshold signal strength so obvious that clues to our detecting limits would be few. It is further recommended that cumulative Soviet failures be reported in summary form well after the fact to keep the record straight on comparative

successes, but that current and detailed reports of Soviet failures be announced only when policy advantages override attendant security risks..."³⁵³

On January 9, Dr. Welsh sent a second letter to Sylvester, enclosing a copy of his November 5 letter, and asking whether Sylvester or his staff had developed any ideas on the subject.

Shortly thereafter, Sylvester responded with a letter saying that, after a series of intradepartmental discussions, he had decided that "the pros outweigh the cons, and that the restrictions (on information concerning Soviet launchings) should remain in effect."³⁵⁴

Russell Hale, on January 14, drafted a memorandum for NASC members and the USIA in which he noted that the Vice President had expressed a desire for review of public information policy. He proposed that public affairs officers of interested agencies meet to go over their respective positions, in the expectation that the subject might be put on the agenda of a Council meeting.³⁵⁵

Dr. Welsh, a short time later, circulated among his staff copies of a draft memorandum he had prepared in anticipation of a Council meeting. Noting the "openness" policy proclaimed repeatedly by the President and other Administration officials, which was consistent with the provisions of the

³⁵³ Dr. Sheldon's drafts, "Public Information Policy on U. S. Space Launchings," Jan. 4, 1963; "Public Information Policy on Soviet Space Launchings," same date.

³⁵⁴ Sylvester letter to Dr. Welsh, Jan. 12, 1963.

³⁵⁵ Hale's draft, Jan. 14, 1963.

National Aeronautics and Space Act, the memorandum commented that there "may be inconsistencies" in policy--"some information is freely disseminated; some is released in a manner which tends to obscure; some is not released at all through official channels." It seemed possible, the memorandum went on, that in some cases more information about U. S. launches was available to the Soviet Union than to the U. S. public, and that our existing practices might be aiding the Soviet effort to conceal their own space failures.

Dr. Welsh observed that Vice President Johnson was interested in having the matter examined, with the objective of obtaining greater consistency, and, if it was in the national interest, more effective implementation of the "openness" policy.

Finally, the memorandum listed thirteen points for discussion--covering a wide spectrum of questions as to U. S. and Soviet tracking competence, security aspects of the release of various kinds of information, and the merits and demerits of increasing the flow of information to the public.³⁵⁶

The Executive Secretary wrote the members of the Council and USIA Director Edward R. Murrow on February 6, attaching copies of the memorandum he had prepared. He explained that they were for study by the persons within the several agencies who might be selected to attend an interagency meeting that he planned to call in the near future. He asked that the other agency heads identify those individuals so that he could arrange the meeting.

³⁵⁶ Dr. Welsh memorandum to Council staff, with attached draft, Jan. 28, 1963

Public Information Activities of the Council

From the Council's inception, it played a major role in informing and educating the public on the Nation's space and aeronautics programs.

Each year since 1961, Dr. Welsh delivered speeches before a wide variety of audiences, including such groups as the American Institute of Aeronautics and Astronautics, the Air Force Association, the National Rocket Club, and the Aerospace Medical Association, as well as Chambers of Commerce, university commencements, other school groups, etc.

He likewise wrote signed articles for newspapers, magazines, trade press publications, and industry house organs. He made numerous live and taped radio and television appearances on behalf of the space program, served as moderator or chairman at many Government and industry conventions and symposia, and responded to letters from organizations and individuals seeking information and guidance.

The Executive Secretary became a source of information for newsmen, in both the general media and the trade press, who needed help in their effort to understand and explain to their readers and listeners the complex field of space activities.

Frequent testimony before Congressional committees, printed later in the official hearing documents, also served to aid the information process.

Members of the staff on occasion also made speeches, wrote signed articles for publication, and participated in conventions and symposia.

During both the Kennedy and the Johnson Administrations, Dr. Welsh, sometimes with staff assistance and sometimes without, prepared speeches, remarks, and messages for delivery by the Vice President, and occasionally for the President. He likewise contributed drafts of letters, and provided innumerable memoranda for the Chairman and for the President.

Annual Report

A useful document produced every year as a requirement of the National Aeronautics and Space Act is the Report to the Congress from the President of the United States on U. S. Aeronautics and Space Activities. Published every January and sent to Congress with a Presidential message of transmittal, it supplies detailed information on the activities during the preceding calendar year of each of the 13 Federal agencies that participate in the National space program. In addition, it includes a lengthy series of appendices providing in convenient form details of U. S. and Soviet launch records during the year, space and aeronautics budget figures in tabular arrangement, and other useful information.

Coordinating, editing and distribution of the Annual Report is one of the major responsibilities of the Executive Secretary and his staff.

*Updated material inserted
3/31/75 per memo from
E.C. Welsh to Califano
1/13/69*

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Live TV of Astronaut Recovery

The Council was instrumental in highlighting the importance of providing live television coverage of NASA's manned space flight recovery operations. A Council staff study was prepared and furnished to NASA on November 2, 1964.^{356a}

Its principal recommendations were:

(a) NASA should take on the task of providing live television of recovery operations for Gemini and Apollo.

(b) In light of the conclusions above, NASA should, with the cooperation of the Defense Department and with necessary industrial support, make a decision as to the technical approach that offers the greatest ultimate cost effectiveness in doing the job.

(c) If a decision to provide two-ocean TV capability cannot be reached for any reason, Pacific coverage only via Syncom III should at least be tested.

^{356a} TV of Recovery Operations for Manned Space Flight; A Feasibility Study, October 29, 1964, NASC Files.

In transmitting the study to NASA's Associate Administrator Seamans, Dr. Welsh suggested that "NASA might want to take a deeper look into both the technical and public information aspects of the proposal. If it seems both desirable and feasible, it should be considered as a regular feature of future manned space flight operations." ^{356b}

In his reply of November 25, Dr. Seamans pointed out that "there is some question in my mind as to the propriety of governments being in effect a television producer." He also stated "I feel it is premature for NASA to assume that such coverage is desirable and feasible." ^{356c}

Dr. Welsh's reply refuted the NASA position:

"... the manned space flight program is a national one, endorsed and supported by the people and the Congress, and of intense interest to them. Continued public support is essential to our whole space program, particularly in this time of budgetary stringencies. Since the Soviets have already captured the prize for the first multiple-manned flight, I think it might well be that the major public impact of Gemini will be in its openness to the eyes of the world. This was certainly true of Mercury. Television might make an important contribution in this respect." ^{356d}

^{356b} Letter from Dr. Welsh to NASA's Associate Administrator Seamans, November 2, 1964.

^{356c} Letter from NASA's Associate Administrator Seamans to Dr. Welsh, November 25, 1964.

^{356d} Letter to NASA's Associate Administrator Seamans from Dr. Welsh, November 30, 1964.

The role of Dr. Welsh's letter in firming up NASA's decision is a matter for professional historians to decide. The record, however, is clear. NASA advised the networks that in connection with the Gemini VI/VII launch on December 4, 1965, that if they desired to effect live coverage of the recovery operations, they were free to install equipment on the recovery carrier WASP at their own expense and to arrange for relay by communications satellite. On December 16, 1965, this became a reality when the Gemini VI capsule landed and two days later when the Gemini VII capsule landed within six and seven miles, respectively, of the recovery ship. This permitted first-time television of the recovery operation by Early Bird satellite to an estimated 50 million Americans.^{356e}

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^{356e} Report to the Congress from the President of the United States, 1965, United States Aeronautics and Space Activities, page 12.

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International Space Exhibits

The Council's involvement in international aeronautics and space exhibitions developed slowly. The feeling of Vice President Johnson and Dr. Welsh was that the Council, as an agency charged with advising the President on space and aeronautics policy, should refrain from any appearance of sponsoring gatherings and expositions which inevitably were in some measure of a private industrial nature.³⁵⁷

Even later, when the Council figured strongly in coordinating planning for certain exhibitions, notably the U. S. participation in the biennial Paris Air Shows, the emphasis remained on assisting and endorsing the purposes of a given exhibition, rather than becoming identified as a sponsoring agency.

Los Angeles Space Exposition

The first major projected exhibition with which the NASC became involved was the First National Space Exposition at Los Angeles, which planners hoped to hold in October 1962.

A member of the Board of Airport Commissioners of the City of Los Angeles telephoned Dr. Welsh late in September 1961 to seek his advice on promotion of the event, including the possibility of U. S. Government backing.³⁵⁸

³⁵⁷ Letter from Vice President Johnson to Mayor Yorty of Los Angeles, November 1, 1961.

³⁵⁸ Letter to Dr. Welsh from Miss Laurel Van Der Wal, member, Board of Airport Commissioners, City of Los Angeles, September 28, 1961.

Meanwhile, Representative Victor L. Anfuso (D-N. Y.), a member of the House Committee on Science and Astronautics, had written to the Vice President in regard to the projected exposition. Dr. Welsh wrote Anfuso to acknowledge receipt of the letter and to report that Los Angeles Mayor Sam Yorty had delivered a communication on the subject to the Vice President's Office. "I am confident," he said, "that he will study the request seriously upon his return to his office."³⁵⁹

The Vice President wrote Congressman Anfuso thanking him for his communication and telling him of Yorty's invitation to endorse and support the Exposition. He promised to give it serious consideration.³⁶⁰

In the next several weeks, Representative Chet Holifield (D-Calif.) wrote to Dr. Welsh seeking support for the Exposition; Senator Robert S. Kerr (D-Okla.), Chairman of the Senate Aeronautical and Space Sciences Committee, sent Dr. Welsh a copy of a letter he had sent Mayor Yorty acknowledging receipt of a copy of Yorty's letter to the Vice President; and Senator Howard W. Cannon (D-Nev.) wrote to the Vice President endorsing the Exposition.

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Rep. Anfuso's letter to Vice President, September 26, 1961;
Dr. Welsh's letter to Anfuso, September 27, 1961.

³⁶⁰

Vice President's letter to Anfuso, September 27, 1961.

Dr. Welsh informed Holifield, Kerr, and Cannon that the Vice President was studying the matter.³⁶¹

On October 20, Dr. Welsh sent a memorandum to Vice President Johnson in which he praised the purposes of the projected Exposition but noted that an endorsement by the Council would make it appear that the Council favored everything connected with the show. He added that such an action would also set a precedent, and many other organizers of exhibitions would seek similar endorsement. Dr. Welsh recommended that the Vice President offer instead to attend the opening of the Los Angeles event or make an appearance some time later.³⁶²

A fresh complication arose on October 23, when the Executive Secretary of the American Rocket Society mentioned in a letter to Dr. Welsh that that organization's officers were concerned that the proposed Exposition might conflict with the Society's 17th annual meeting and Astronautical Exposition, scheduled for November 12-18, 1962, in Los Angeles. He proposed to come to Washington to discuss the problem.³⁶³

³⁶¹ Holifield letter to Dr. Welsh, October 6, 1961; Dr. Welsh letter to Holifield, October 9, 1961; Copy of Kerr letter to Yorty, October 12, 1961; Dr. Welsh letter to Kerr, October 18, 1961; Copy of Cannon letter to Vice President, October 19, 1961; Dr. Welsh letter to Cannon, October 24, 1961.

³⁶² Dr. Welsh memorandum for the Vice President, October 20, 1961.

³⁶³ Letter to Dr. Welsh from James J. Harford, Executive Secretary, ARS, October 23, 1961.

Finally, on November 1, Vice President Johnson wrote to Mayor Yorty advising him that the Council would not sponsor the Exposition. "We feel that as a general rule we should refrain as a body from sponsoring expositions in which many of the exhibits must necessarily be of a private nature," the Vice President said. "The Space Council is charged with advising the President on policy matters concerning the space program. Therefore, it is incumbent upon us to refrain from any connection with industrial exhibits which could conceivably be misconstrued . . ." He added that he hoped to have the opportunity to attend the Exposition.³⁶⁴

On the same day, the Vice President discussed the matter at a meeting of the Council.

Mayor Yorty wrote Dr. Welsh on November 30, thanking him for his expressions of support and informing him that the organizers had decided they could not meet the hoped-for October 1962 schedule for the Exposition. He said they hoped to hold the event at a later date.

Dr. Welsh responded with a letter asking that he be kept informed of progress toward staging the Exposition.³⁶⁵

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Vice President's letter to Yorty, November 1, 1961.

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Yorty letter to Dr. Welsh, November 30, 1961; Dr. Welsh letter to Yorty, December 6, 1961.

New York World's Fair

In February 1962, well over two years before the first-year opening of the Fair, Dr. Welsh received a letter from James J. Harford, Executive Secretary of the American Rocket Society (ARS -- which merged with the Institute of Aerospace Sciences a year later to form the American Institute of Aeronautics and Astronautics).

Harford wrote that at the instruction of Dr. William Pickering, Director of the Jet Propulsion Laboratory and President of the ARS, he was seeking to bring to the attention of the Vice President a proposal that the Society would organize and administer an aerospace exhibition at the forthcoming New York Fair.

(Harford's letter came after a telephone call on February 23, during which he spoke with Russell W. Hale, assistant to Dr. Welsh. He said the New York Port Authority, in over-all charge of the Fair, had invited the ARS to undertake the aerospace exhibit. He said the Society was anxious to have the Administration's "enthusiastic endorsement," that he understood that NASA Administrator Webb "is in favor" of the project, and that he and Dr. Robert A. Gross, of the ARS Board of Directors, would welcome an opportunity to present details of the planned exhibition to Dr. Welsh and the Vice President.³⁶⁶

³⁶⁶ Memorandum from Miss Margaret Quill, Dr. Welsh's secretary, February 23, 1962; Harford letter to Dr. Welsh, February 26, 1962.

On March 1, 1962, Harford made a follow-up call to Hale, who by that time had discussed the proposal with Dr. Charles S. Sheldon II of the Council staff and two Department of Commerce staff men. Hale advised Harford: 1) not to come to Washington early in the next week, as he had proposed to do, since it was uncertain whether either the Vice President or the Executive Secretary would be available at that time; 2) to have the New York Port Authority write to either the Vice President or Commerce Under Secretary Gudeman (with whom the Port Authority was working on other matters in connection with the Fair) or Dr. Welsh to state whether they wanted the ARS to be exclusive managers of the aerospace exhibit or might have alternative ideas; and 3) that he (Hale) had been unable to track down any endorsement or approval or favorable attitude on the part of Webb or NASA.

Harford said he intended to bring a Port Authority official with him to Washington to make the point that the Authority was anxious to have the Society run the exhibition. Hale commented that this would improve the situation: if the ARS had a "green light" from the Fair's organizers without benefit as yet of any Executive Branch subsidy or endorsement, the matter could be approached quite differently.

Harford said he appreciated the suggestions, would consult with his colleagues and be in touch.³⁶⁷

³⁶⁷ Hale memorandum for the record, March 1, 1962.

The next day, President Robert Moses of the New York World's Fair 1964-65 Corporation sent a letter to Dr. Welsh in which he affirmed that the Corporation had asked the ARS to be responsible for the aerospace exhibition's integrity and authority. "We sincerely hope you will concur in our selection and encourage this group to accept our invitation," Moses said.³⁶⁸

Shortly after this, Harford called Hale and asked if it would be worthwhile for him to come to the Capital and confer with anyone else in Dr. Welsh's absence. Hale replied that if he wanted to get to the Vice President, he should make the approach through Dr. Welsh. Hale noted that the Executive Secretary had all of the papers involved, and that he would inform him about the call. Then, Hale said, he would ask Dr. Welsh to call Harford and set up an appointment for the week of March 12.³⁶⁹

Shortly thereafter, Dr. Welsh, having held his scheduled meeting with Harford and others, wrote to Dr. Pickering, President of the American Rocket Society, Incorporated. He pointed out that the Council's policy had been to make no formal endorsements of conventions or exhibitions. He also called Dr. Pickering's attention to President Kennedy's announcement of March 13, in which he gave the Fair as a whole formal and tangible support.

³⁶⁸ Moses letter to Dr. Welsh, March 2, 1962.

³⁶⁹ Hale memorandum for the record, March 5, 1962.

As to NYWF Corporation, President Moses' request that the ARS be responsible for the aerospace exhibit, Dr. Welsh complimented the Corporation on its "excellent judgment" and said he hoped the Society would accept the role. He said a greatly increased public understanding of the space program was of vital importance, and that he was confident that if the Society undertook to organize and administer the exhibit, it would do a splendid job.³⁷⁰

Harford wrote to Dr. Welsh on March 22, reporting that in Dr. Pickering's absence he, as Executive Secretary, had opened the above letter at ARS headquarters in New York City. He said he had read the letter over the phone to Dr. Pickering in Pasadena, California, that the ARS President was "very gratified," and "we in New York are ecstatic." He added that the Society's Board of Directors would discuss the matter at its meeting in Phoenix, Arizona, on April 14.³⁷¹

The next day Harford sent Dr. Welsh a copy of a letter he had sent to Dr. Harold Brown, Director of Defense Research and Engineering, in the Pentagon. The letter informed Dr. Brown that Harford had conferred with Dr. Welsh to discuss the Fair organizers' invitation to the ARS, that the Council's Executive Secretary was greatly interested and had written Dr. Pickering to that effect (Harford enclosed a copy of Dr. Welsh's letter).

³⁷⁰ Dr. Welsh's letter to Dr. Pickering, March 19, 1962.

³⁷¹ Harford letter to Dr. Welsh, March 22, 1962.

After outlining the Society's tentative exhibition plans, Harford noted that Dr. Welsh had suggested Harford write to Dr. Brown, as well as to NASA and the AEC, since all three agencies might wish to coordinate an exhibit in the theme center. He dwelt on the potential advantages of such an exhibit -- e. g. , that some 70, 000, 000 visitors were expected to attend the Fair, and said he would like to discuss the project and DOD's possible participation with Dr. Brown or a designee at the earliest convenience. Harford sent similar letters, with the same enclosures, to NASA Administrator Webb and AEC Chairman Seaborg.³⁷²

He simultaneously informed the Department of Commerce of the situation, writing to Assistant Secretary (International Affairs) Jack N. Behrman. He enclosed a copy of Dr. Welsh's letter to Dr. Pickering, and copies of his letters to Dr. Brown, Webb and Seaborg. He explained that Dr. Welsh had asked him to inform Behrman of developments, since the Assistant Secretary was coordinating all Government participation in the Fair, and added that he would be happy to come to Washington to discuss the project. A copy of the letter to Behrman was sent to Dr. Welsh.

On April 4, the Executive Secretary received from Behrman a copy of a reply letter transmitted to Harford. The Commerce official noted "tremendous" interest in the projected exhibit, but noted that it was to be

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Copies of Harford letters to Dr. Brown, Webb and Seaborg, March 23, 1962.

held in a Fair-provided building separate from the U. S. Government pavilion, for which funds were still pending in Congress. He suggested that the ARS work directly with the agencies involved.³⁷³

It soon became apparent that the Society's collective leadership was less enthusiastic about its proposed role at the Fair.

On April 16, two days after the ARS Board of Directors meeting in Phoenix, Executive Secretary Harford informed Dr. Welsh by letter that the Board had decided against taking the primary responsibility for an aerospace exhibit. He said there were two reasons: 1) accepting the task would divert so much of the organization's energies from other important matters, and 2) there was a substantial financial risk -- \$2 million would be required for lease of space alone.

He said, however, that Dr. Pickering had stated that the Society agreed with Dr. Welsh on the importance to the Nation of a proper space exhibit at the Fair, and had therefore authorized Harford and Dr. Robert A. Gross, a member of the Board, to visit Webb and other Government officials to urge support for such an exhibit at the Fair. Harford added that the Society would stand ready to provide consulting advice and assistance to any properly approved group made responsible for the exhibition.

He enclosed copies of letters received from Seaborg and Behrman in reply to his correspondence of March 23. He reported that Webb had

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Copy of Harford letter to Behrman, March 23, 1962; copy of Behrman reply, April 4, 1962.

chosen to respond by telephone.

According to Harford, Webb said NASA could not discuss possible participation until the Department of Commerce decided how Government funds would be allocated. He said NASA would take part in the U. S. Government pavilion, and that he believed Congress would not permit his agency to participate in a separate exhibit.

Harford disclosed that he had approached five aerospace companies informally on the idea of the Society organizing and managing the exhibit; he said they were quite interested, although they said they were not in a position to commit themselves to participation, which the Society had not requested in any case. In the past few days, he reported, other companies had learned of the ARS interest through an article in the April 9 issue of Missiles and Rockets magazine entitled "Aerospace Island -- Never-Never Land?" and reporting on the difficulties being encountered in efforts to get an aerospace exhibition set up for the Fair. He enclosed a copy of the article.³⁷⁴

Development of the planned Government participation at the Fair moved ahead with the issuance of a White House Executive Order on April 17. In Section 2, the Order said, "Interested departments and agencies of the Federal Government, including the Department of State, the United States

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Harford letter to Dr. Welsh, April 16, 1962, with enclosed copies of letters from Seaborg and Behrman and copy of article from Missiles and Rockets.

Information Agency, and the National Science Foundation, and requested to cooperate with the Secretary of Commerce in planning and providing for U. S. participation in the New York World's Fair."³⁷⁵

At this point, correspondence ceased for some ten months regarding an additional aerospace exhibit at the Fair apart from what was to be shown at the U. S. pavilion.

On August 3, 1962, John Meehan, president of an organization named American Interspace, Incorporated, of Orlando, Florida, transmitted a letter to President Kennedy in which he proposed a "National Aerospace Exhibition" at the Fair. He sent Dr. Welsh a copy of his transmittal letter and proposal. Dr. Welsh wrote in reply on August 7, commenting that the proposal was interesting and appeared to have been thoughtfully prepared.³⁷⁶

After an ensuing six months during which the Council had no further communications regarding the Fair, the President received a letter from Paul R. Screvane, President of the Council of the City of New York.

Screvane wrote that he, as a member of the Executive Committee of the New York World's Fair 1964-65, was "most appreciative of the tangible support you have given the Fair in obtaining an appropriation for the Government's participation." He added: "We are greatly disappointed,

³⁷⁵ White House Executive Order, April 17, 1962.

³⁷⁶ Copy of Meehan letter to Vice President and letter to Dr. Welsh, August 3, 1962; Dr. Welsh's letter to Meehan, August 7, 1962.

however, that nothing is being done in the Fair to reveal man's achievements in space and to bring to 70,000,000 visitors an understanding of our progress in this field. We believe there is no future aspect of our space activities which exceeds the job of increasing public knowledge of this program."

The City Council president said he believed the only way to accomplish that job was to create a joint NASA-industry space exhibition. He suggested that NASA Administrator Webb should meet with industry and Fair Corporation representatives to formulate a plan for such an exhibition.

Screvane had a further suggestion to enhance his proposal. "New York," he told the President, "is about the only major U. S. city without a science museum. If the proposed exhibition is accomplished, at the end of the Fair the buildings and suitable exhibits might be turned over to the City for a modern museum of science, benefiting millions in New York City and nearby."³⁷⁷

On February 15, 1963, Dr. Welsh sent a note to Richard L. Callaghan, Special Assistant to the NASA Administrator, attaching Screvane's letter to the President.³⁷⁸

Callaghan returned the Screvane letter to Dr. Welsh on March 11. In an accompanying letter he noted that, as he had mentioned to the Executive

³⁷⁷ Screvane letter to the President, February 11, 1963.

³⁷⁸ Dr. Welsh's note to Callaghan, February 15, 1963.

Secretary in a recent conversation, Webb had been in direct contact with Screvane at the direct request of the President.

NASA's contribution to the Federally financed exhibition at the Fair was to be "rather modest," Callaghan said. He reported that the agency's general counsel believed NASA was legally in a position to participate in any expanded fashion without getting appropriations from Congress, specifically earmarked for that purpose. As of that point, Callaghan wrote, there was no intention to seek additional funds to finance any NASA exhibition at the Fair other than that in the Federal pavilion.

On the next day, Dr. Welsh wrote a letter to Screvane, telling him that Webb had been informed of Screvane's proposal to the President and that the Council understood that Webb had been in touch with Screvane. It was also understood, Dr. Welsh added, that Webb would maintain a continuing liaison in order to be of such assistance as was within his power and responsibility.³⁷⁹

NASA published a press release on March 19 headlined, "NASA Discusses Plans for World's Fair Exhibit." It reported that Webb and Screvane had conferred in Washington about a possible NASA loan to the Fair of a 361-foot inflatable Saturn V rocket replica housing 10,000 square feet of models and exhibits. The agency had been considering using such a horizontal-resting booster replica for a traveling exhibition program, the release continued.

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Dr. Welsh letter to Screvane, March 12, 1963.

It quoted Screvane as saying that the World's Fair Committee would appear before the New York City Board of Estimates that week to present a proposal for an appropriation for a building at the Fair site to be used as a permanent Hall of Science. He asked, the release said, that NASA consider permitting the first showing of the projected Saturn replica at the Fair adjacent to the Hall.

Webb emphasized, according to the release, that the replica plan was still being considered, and no estimate of the cost had been made. He assured Screvane that the request would be considered.

In any case, the release said, NASA would cooperate with other Government agencies in the Federal pavilion, and in fact did so cooperate.³⁸⁰

The Paris Air Show -- 1965, 1967, 1969

The Paris Air Show, held biennially at Le Bourget airport, is both a prime occasion for demonstrating technological progress and a major opportunity for developing sales of aerospace products. The United States has always participated.

When the 1965 Show opened in May, it was apparent immediately that the Soviet exhibit would overshadow that of the United States, both in size and in appeal to the public. As the official and press reports of this embarrassing situation came back, President Johnson became convinced

³⁸⁰ NASA Press Release, March 19, 1963.

that something should be done to offset the Soviet superiority and salvage some of America's prestige. He decided to send Vice President Humphrey to Paris, together with James Webb and two of the Gemini astronauts, Colonels Edward White and James McDivitt.

So successful was the Humphrey-astronaut visit that it was widely reported as having "saved the day" for the U. S. exhibition, in terms of attracting attention and stirring appreciation for the accomplishments of the nation in space.

To the Vice President, the experience demonstrated the importance of the Paris Shows, and the need for more advanced and thorough planning of U. S. exhibitions at international aerospace events.

This was reflected early in the next year, when the officer in charge of space matters at the Department of State wrote to Dr. Welsh. He recalled that they had held a conversation recently about the Vice President's interest in the 1967 Paris Show. He reported that a subcommittee, chaired by the Department of Commerce, had been established under the interagency International Exhibits Committee, and was actively planning for the Show, which was scheduled to open on May 22, 1967.

Six Government agencies -- Department of Commerce, Department of Defense, NASA, FAA, AEC and USIA -- were planning to take part in the U. S. national exhibition, he said, following a unified theme still to be developed. Airframe manufacturers were to negotiate individually for space

in their display hall, and Commerce was to negotiate for a single display area for U. S. component vendors. He said he felt that the groundwork was well laid and planning was further along than it had been at this stage prior to any previous Show: What was needed now was reassurance of adequate funding and top-level support. Also, he said, the planners would like to know whether one or more astronauts might be available to attend the Show.³⁸¹

On June 13, 1966, Dr. Welsh sent a memorandum to the Vice President suggesting that he call the Secretary of Commerce to inquire about the progress of planning for the 1967 Show, referring to his experience at the previous Show and to his conviction that a vigorous effort at such events bears dividends.³⁸²

The Vice President sent a memorandum to Commerce Secretary Connor on June 30, expressing his hope that "special attention" could be given to the 1967 exhibition effort, noting that the astronauts' presence at that occasion had given it an extra lift, and offering to help in any way feasible. He sent a letter with a similar message to the responsible official within the Department.³⁸³

³⁸¹ Letter to Dr. Welsh from T. H. E. Nesbitt, officer in charge, Outer Space Affairs, International Scientific and Technological Affairs, Department of State, March 24, 1966.

³⁸² Dr. Welsh memorandum for the Vice President, June 13, 1966.

³⁸³ Vice President's memorandum to Secretary Connor, June 30, 1966; Vice President's letter to Paul Pauly, Director, Office of International Trade Promotion, Bureau of International Commerce, Department of Commerce, June 30, 1966.

Secretary Connor wrote a memorandum to the Vice President a few weeks later in which he reported that he had "taken a personal interest in assuring an outstanding U. S. participation." He said friends in the aerospace industry had told him how the last-minute 1965 appearance of the Vice President and the astronauts had given a much-needed demonstration of U. S. leadership and interest. He said it was widely agreed that there should be long-range planning for 1967. As a consequence, he wrote, an Interagency Trade Fair Committee meeting in December 1965 had designated Commerce as coordinator for the 1967 Show, and later an Industry Advisory Committee was formed. "Broad support is now assured," Connor said.

He concluded that he was "naturally delighted at your interest," and offered to arrange a briefing at the Vice President's convenience.³⁸⁴

The Vice President replied by memorandum on July 18, saying that he could "see things are well in hand." He suggested that Dr. Welsh and Colonel Don Paffel, a Vice Presidential assistant, meet with officials of the Office of International Trade Promotion for a briefing.

Such a meeting was arranged, and the briefing officers included Pauly, Director of the OITP, and A. Preston Roe, OITP's coordinator for the 1967 Show.³⁸⁵

³⁸⁴ Connor memorandum for the Vice President, July 14, 1966.

³⁸⁵ Vice President's memorandum to Secretary Connor, July 18, 1966;
Vice President's memorandum to Dr. Welsh, July 18, 1966;
Memorandum to Dr. Welsh from A. Preston Roe, July 25, 1966.

On July 27, a member of the Council staff reported to Dr. Welsh that a briefing held at the Department of Defense showed that interagency preparatory effort for the show was "outstanding." He urged that Charles A. Lindbergh be prevailed upon, at whatever Government level might be necessary, to attend the U. S. exhibition, thus aiding the over-all theme of the presentation ("In the Spirit of Lindbergh") decided on by the planners.

It was also felt that whatever reasonable funds and personnel were necessary for a first-class U. S. effort should be made available. He noted that he understood that USIA funds were "very limited." Further, he urged that NASA should make some of its astronauts available for an appearance.

Dr. Welsh forwarded the memorandum to Colonel Paffel.³⁸⁶

On August 31, Secretary Connor invited Dr. Welsh to attend an inter-agency presentation of a status report on Show planning scheduled for September 6. The date was later changed to September 23.

Dr. Welsh, Colonel Paffel, and Mrozinski of the Council staff were at the presentation. In summary, the latter recorded that the current plans called for a U. S. Pavilion of 50,000 square feet, including a national exhibition, for popular appeal, and an adjacent but separate industrial "hardware hard sell." Exhibitors were to be the Government agencies

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Mrozinski memorandum to Dr. Welsh, July 27, 1966; Dr. Welsh attaching note to Paffel, July 27, 1966.

referred to earlier, Communications Satellite Corporation, and about 50 industry companies. Planners hoped to have on display a then-current astronaut team, Apollo spacecraft items, a Surveyor unmanned lunar-lander, a lifting body, an ultra-modern helicopter, an X-15 rocket aircraft, and a Titan launch vehicle.

The theme was to be current and potential progress in the 40 years since Lindbergh's solo transatlantic flight to Paris in the Spirit of St. Louis. (A reduced-size St. Louis arch was to be erected; the Mayor of St. Louis was to attend; and there was to be a fly-in of a replica of the historic airplane. There was no promise that Lindbergh himself would be present.)

It was also noted that the USSR was planning a sizable exhibition, in part because 1967 was the 50th anniversary of the Bolshevik Revolution.

Dr. Welsh forwarded the summary to the Vice President.³⁸⁷

Planning appeared to be proceeding well. There was no further Council correspondence on the matter in 1966.

Early in March, the Vice President sent Dr. Welsh a copy of a UPI dispatch to the effect that the Soviet Union would display at the Paris Air Show a supersonic transport aircraft (SST). Dr. Welsh and his assistant, Russell W. Hale, investigated and reported that they could find no information to support the wire service item; that at most rumors were that the

³⁸⁷ Mrozinski memorandum to Dr. Welsh, September 23, 1966; Dr. Welsh's attaching note to the Vice President, September 26, 1966.

Soviets might show a modified jet bomber that was relatively small compared with an SST.³⁸⁸

As the opening of the Paris Air Show drew nearer, there were late suggestions from industry for expanding plans for the U. S. exhibition.

On May 8, Dr. Welsh informed the Vice President that Chairman Miller and Representative Karth of the House Science and Astronautics Committee, together with two representatives of Hughes Aircraft Company, had come to him with a proposal that the U. S. Pavilion at the Air Show be opened during a press day preview on May 25 by a message from the President or the Vice President via satellite. The proposal called for sending the message from Washington to the Goldstone, California, tracking station, then to the Surveyor satellite currently on the Moon, back to Goldstone, thence to the ground station at Andover, Maine, on to a communications satellite and finally to Paris.

Hughes, manufacturer of Surveyor, stressed that the company did not suggest that its name be used in the exercise and wanted it to be a U. S. Government-ComSat Corporation project. The visitors told Dr. Welsh that the technical feasibility of sending a message to the Surveyor on the Moon and back had been proven in a test on May 3.

Dr. Welsh told the Vice President he felt the proposal made sense, and asked whether the Vice President wanted to raise the question with the

³⁸⁸ Hale memo to Dr. Welsh, March 7, 1967; Dr. Welsh memorandum to the Vice President, March 7, 1967.

President or have him do so. In the meantime, he would check to see that NASA approved of this use of Surveyor.³⁸⁹

Several days later he sent the Vice President another memorandum, reporting that further testing indicated that noise in the Surveyor transmission was strong enough so that it might make a message unintelligible. He said he was asking NASA to continue tests to verify this. He added that he was also having USIA advised of this development and suggesting that even if Surveyor could not be used, a statement from either the President or the Vice President via communications satellite might be well worthwhile.³⁹⁰

Next, he sent a memorandum to the President, recounted the proposal, and noted that the Vice President and USIA Director Marks thought it would be a good idea for the President to deliver the message. He mentioned the alternative of beaming his remarks merely by satellite if the Surveyor exercise was not feasible.³⁹¹

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Dr. Welsh memorandum for the Vice President, May 8, 1967.

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Dr. Welsh memorandum to the Vice President, May 12, 1967.

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Dr. Welsh memorandum to the President, May 17, 1967.

At the same time, Dr. Welsh sent Marks a note attaching a copy of his memorandum to the President and saying he hoped that Marks would "have an opportunity to use your persuasiveness..."³⁹²

On May 22, however, he was sent a note from the President's office saying that the "President thought it might be too spectacular."

He promptly sent memoranda to Vice President Humphrey and Marks informing them of the President's decision. To the Vice President he commented that the latter probably would not want to make the broadcast himself in view of the President's feeling.³⁹³

In the last days before the Show opened, there was a spirited inter-agency disagreement over whether the United States should fly its Mach 3 Air Force RS-71 strategic reconnaissance plane to the Show, as an evidence of the most advanced U.S. aeronautical technology. U.S. Ambassador Bohlen wired from Paris to the Commerce Department's OITP urgently requesting that the RS-71 be brought to the Show. Bohlen said high-level French officials were making the same request. The Department of Defense had already been asked by the Commerce planners to make the RS-71 available, and Deputy Secretary Cyrus Vance had turned down the request on the grounds that U.S. participation at the Show was supposed to represent

³⁹² Dr. Welsh memorandum to Marks, May 17, 1967.

³⁹³ White House note to Dr. Welsh, May 22, 1967; Dr. Welsh memoranda to Vice President and Marks, May 23, 1967.

civilian rather than military aircraft. The Vice President said he would strongly recommend that the RS-71 be displayed, unless it was inferior in some way or suffering from operational difficulties.³⁹⁴

Shortly thereafter Dr. Welsh received a letter from Donald G. Agger, Assistant Secretary of Transportation (International Affairs and Special Programs) supporting the RS-71 proposal. He said that Secretary of Transportation Alan Boyd had told him of discussing the matter with Vance, and of the DOD decision. Stressing that he felt the U.S. should demonstrate that it was the world leader in aeronautics, Agger took exception to the DOD argument.

"Some part of the value of military power is visibility," said Agger. He added that he was sure that everyone attending the show "who's worth worrying about" understood that "our big military systems represent an umbrella of protection." Since Bohlen appeared to share his view, he said, he wondered whether Dr. Welsh or the Vice President might like to examine the issue.

Dr. Welsh replied by letter that, as Agger knew, he had not seen much hope that there would be a change at that late date in RS-71 policy. He said the Vice President was enthusiastically in favor of having the Nation put its

³⁹⁴ Vice President's memorandum for Dr. Welsh, May 20, 1967 (C) attaching memorandum to Vice President from Col. Paffel, May 19, 1967.

best technological foot forward, provided that did not interfere with any other major policy positions.³⁹⁵

He wrote a memorandum to the Vice President on the same day, attaching Agger's letter. He said he doubted that anything could very easily be done, although he felt there would be some merit in showing off the most modern aircraft. "However, I did agree to bring it to your attention," the memorandum closed.³⁹⁶

Dr. Welsh sent the Vice President another memorandum in which he said he had called Vance and expressed the Vice President's interest in showing the RS-71 unless it had technical difficulties.

Welsh said that Vance explained that he had discussed the question with Under Secretary of State Nicholas Katzenbach, and that they had agreed that "this is not the time to show off this plane." Vance added that it was not a matter of security but of international political judgment, and that he and Katzenbach had agreed that the press would play up the "spy plane" angle so that the harm done would be greater than the gain from such a show of technological competence.³⁹⁷

³⁹⁵ Agger letter to Dr. Welsh, May 23, 1967; Dr. Welsh letter to Agger, May 24, 1967.

³⁹⁶ Dr. Welsh memorandum to the Vice President, May 24, 1967.

³⁹⁷ Dr. Welsh's memorandum to the Vice President, May 24, 1967.

With the Show opening in Paris on the following day, the discussion of an RS-71 display came to an end.

The U.S. exhibition was an immediate success. On June 1, Dr. Welsh sent the Vice President a note attaching a highly enthusiastic report from Ambassador Bohlen on the reaction of the public and official visitors to the display. ³⁹⁸

A few weeks after the Show closed on June 4, the Interagency Exhibits Committee met in Washington to compare notes on the exhibition and discuss preliminary ideas for Paris Air Show 1969. ³⁹⁹

Vice President Humphrey sent Dr. Welsh a memorandum in July suggesting that planners should soon get busy if the 1969 Show was to be a further improvement. Dr. Welsh replied that he would direct staff attention to the matter. ⁴⁰⁰

Members of the Council staff attended meetings of the Interagency Exhibits Committee during the following months and kept abreast of activities connected with the 1969 Show. Despite the enthusiasm stirred by the successful 1967 exhibition, it soon became apparent that events on the

³⁹⁸ Dr. Welsh note to the Vice President, June 1, 1967.

³⁹⁹ Dr. Welsh note to Vice President attaching memorandum by Bundy of Council staff, July 10, 1967.

⁴⁰⁰ Dr. Welsh memorandum to Vice President, July 25, 1967.

national and international scene were creating problems for the planners of the new Show. On the one hand, President de Gaulle's action in forcing NATO to move its headquarters out of France would make it more complicated and expensive for the Department of Defense to provide crucial logistical support for the 1969 exhibition. At the same time, the rise in expenditures for the Vietnam war would necessitate budget cutbacks in many areas of Government activity, reducing the amount of funds available for a variety of desirable programs.

On January 22, 1968, Dr. Welsh reported to the Vice President that the Air Force was recommending to the Office of the Secretary of Defense that there be no Air Force participation in the Show. This had been stated by Air Force Secretary Harold Brown, according to information from the Department of Commerce, but had not yet been passed on by OSD. Dr. Welsh observed that the removal of Air Force logistical support would have a substantial impact. He said the Air Force apparently felt that it contributed an undue proportion of the total cost of the 1967 exhibition, and was now being asked to take on an even bigger financial burden for 1969, at a time when funds were tighter. ⁴⁰¹

⁴⁰¹ Dr. Welsh memorandum to the Vice President, January 22, 1968.

The Vice President suggested to Dr. Welsh on February 8, that the Paris Air Show perhaps should be a topic for consultation within the Council. He wrote that "I would hate to see us forego the opportunity to participate in that . . . all-important aviation show. I can understand that the international situation may necessitate our taking a second look. But at least I think we should talk about it. Possibly you would like to indicate my concern to the Department of Defense and the Department of Commerce."⁴⁰²

The Paris Air Show was placed on the agenda for a meeting of the Council on February 14.

On the day before the meeting, Dr. Welsh sent the Vice President clippings of two press articles on the subject. The first, from Aviation Week and Space Technology, was a report of State and Defense Department conflict over plans for participation in the Show, with the Department of Commerce "caught in the middle." It mentioned that Secretary McNamara was directing that DOD not participate. The second was an editorial from the Washington Post, entitled "Shortsighted Folly." The Post said that a "military pullout" from the Show would also mean no participation by four major U.S. aircraft manufacturers who made only military planes. It commented that "this short-term savings of \$600,000 will probably result in a very substantial balance of payments loss."⁴⁰³

⁴⁰² Vice President's memorandum to Dr. Welsh, February 8, 1968.

⁴⁰³ Note from Dr. Welsh to Vice President attaching clippings, February 13, 1968.

At the Council meeting on February 14, the Vice President heard a discussion of the situation by representatives of all agencies involved, including the Department of Commerce, which was invited to attend along with member agencies. Commerce and State Department spokesmen argued strongly for military participation. The DOD representative said that his department was less concerned about the cost of participation than it was about the "military image" that might be created, in the DOD view, by the presence of its aircraft.

On February 27, Dr. Welsh sent identical memoranda (limited official use) to Deputy Under Secretary of State Bohlen, Director of Defense Research and Engineering Foster, NASA Administrator Webb, AEC Chairman Seaborg, DOT Assistant Secretary Agger and USIA Director Marks -- each of whom had represented his agency at the Council meeting. He recalled that at the close of the meeting's discussion of the Show planning the Vice President had asked the Commerce representatives to supply several alternative plans for Government participation, all including some degree of DOD participation.

Enclosed with the memoranda were copies of two alternative plans supplied by Assistant Secretary of Commerce Lawrence C. McQuade and a letter from McQuade to Dr. Welsh. In the letter, McQuade said either of the plans provided "adequate" military participation, and if all of the agencies involved would commit themselves within a few days to support one of the plans, Commerce would recommend proceeding. Otherwise, he said, lack of funds and lead time for preparing the exhibition would make it impossible to put on a suitable show, and he would recommend withdrawal.

Plan I submitted by Commerce called for DOD participation on the flight line and in the exhibit area, with flexibility as to the number of aircraft to be shown. Plan II provided for participation on the flight line only, with "minimum" (six aircraft) but "prestigious" representation. Total cost of Plan I would be \$1,308,000 to \$1,958,000, with DOD's estimated share being \$422,000 to \$1,072,000. Total cost of Plan II would be \$1,208,000, with DOD paying an estimated \$250,000.⁴⁰⁴

On March 1, Dr. Welsh sent the Vice President a draft of a letter he had written for the Chairman to send to Secretary of Defense Clifford. In an accompanying note, he reported that there was a rumor that some Pentagon officials were preparing a recommendation to be given Clifford within a few days urging him to reaffirm McNamara's decision against DOD involvement. "Your letter should get there first, if at all possible," Dr. Welsh wrote.⁴⁰⁵

The Vice President sent the letter to Clifford on March 4. He restated his own position on the issue, recounted the discussion at the February 14 Council meeting, and reported on the initial response of other agencies. All of those agencies were interested in participating in the Show, the Vice President noted, and all expressed hope that DOD would play its usual constructive role.

⁴⁰⁴ Dr. Welsh memoranda to Bohlen, Foster, Webb, Seaborg, Agger, and Marks, February 27, 1968, with enclosures.

⁴⁰⁵ Dr. Welsh note to Vice President, attaching draft of letter to Clifford, March 1, 1968.

He recalled that the DOD representative at the Council meeting had conceded that an international political judgment, not financial considerations, was the chief basis for the withdrawal decision approved by Clifford's predecessor. He said he would appreciate it if DOD would re-examine its position, after studying the costing alternatives prepared by Commerce, and, hopefully, agree to participate. "I will be pleased," he concluded, "to discuss with you my personal experiences with the Show, and the points of view expressed by other top Government officials."⁴⁰⁶

Shortly thereafter, the recipients of Dr. Welsh's February 27 memoranda, other than DOD's Foster, replied with statements on their positions. Bohlen said he preferred Plan I because it came closer to providing participation on the 1967 level. Webb said both plans appeared "attractive but . . . extremely ambitious;" he said NASA was willing to supply display hardware including already-flown spacecraft, as well as a small amount of funding, but noted that his agency was committed to participation in several other forthcoming international exhibitions and "we're on the verge of overextending ourselves . . ."

Seaborg wrote that he preferred Plan I, as a more effective presentation with more equitable distribution of costs. Agger said Transportation would back the Show in every way possible, but felt that DOD participation

was essential. Marks said he preferred Plan I but would accept Plan II, and that he felt DOD was indispensable to a major presentation, without which the U.S. should withdraw.⁴⁰⁷

Dr. Welsh informed Commerce Assistant Secretary McQuade that he had received replies from all agencies other than DOD. He enclosed copies.⁴⁰⁸

Three days later Dr. Welsh sent the Vice President a memorandum. "I know you have many more important matters of concern," he began, "but the DOD delay on a decision (re the Paris Air Show) is hampering the orderly planning you requested and impairing a bit your reputation for getting things done." He went on to note that Secretary Clifford apparently had not responded to the Vice President's letter of March 4, and to report that all the other agencies had sent written responses to the February 27 memorandum. He added that Commerce was very troubled because of the time factor in planning and the possibility of a money penalty on their contract. He urged the Vice President to call Clifford and get an answer.⁴⁰⁹

On April 8, he sent word that he had learned from the Pentagon that Clifford was writing to advise that DOD would not participate. He said he would wait until the Vice President received that message before advising the other interested agencies.⁴¹⁰

⁴⁰⁷ Bohlen memorandum to Dr. Welsh, March 5, 1968; Webb's of March 15, 1968; Seaborg's of March 8, 1968; Agger's of March 11, 1968; Marks' of March 5, 1968.

⁴⁰⁸ Dr. Welsh memorandum to McQuade, with enclosures, March 25, 1968.

⁴⁰⁹ Dr. Welsh memorandum to the Vice President, April 3, 1968.

⁴¹⁰ Dr. Welsh memorandum to the Vice President, April 8, 1968.

Dr. Welsh received a copy of Clifford's letter to the Vice President on April 17. The DOD Secretary stated that he reaffirmed McNamara's decision that his department should not participate. On the same day, Dr. Welsh informed the Vice President that as a consequence Commerce had advised that it was withdrawing from the responsibility of coordinating the U.S. exhibition, and had suggested that the Interagency Exhibits Committee issue a press release announcing that plans for a U.S. Government-industry Pavilion had been dropped. He said such a release was expected to be issued the next day.⁴¹¹

He sent still another memorandum on April 26, noting that the Vice President had just received a plea from Secretary of State Rusk that DOD be overruled. He asked whether this was now a matter that should be taken up with the President, and offered to prepare a summary of the situation for that purpose.⁴¹²

On May 1, Dr. Welsh sent Secretary Clifford a copy of the letter Rusk had written to the Vice President. In it, Rusk reaffirmed State's view that U.S. participation in the Show was important to the Nation's policy objectives in Europe. He said the Show was the most important showcase abroad for U.S. aerospace products, which accounted for 10% of total U.S. export of manufactures, and that manufacturers might be discouraged from taking part

⁴¹¹ Dr. Welsh memorandum to the Vice President, April 17, 1968.

⁴¹² Dr. Welsh memorandum to the Vice President, April 26, 1968.

by Government withdrawal. He said such a withdrawal would be exploited by those who had alleged that the U.S. wanted to pull out of Europe. In any case, Rusk said, without DOD participation any U.S. effort was likely to be a failure.⁴¹³

Dr. Welsh went to work on drafting a letter for the Vice President to transmit to the President.

After giving the background of the Paris Air Show, the letter referred to the fact that the U.S. exhibition should help to improve the balance-of-payments situation and draw attention to the Nation's technological capability. It recalled that President Johnson had saved the day at the 1965 Show, and declared that "I believe now is the time to act to the same end."

It was reported that a strong case was made for U.S. participation at the Council meeting earlier in the year, with State and Commerce being the most emphatic regarding the net advantages. Only DOD did not agree, the letter noted, and even that department was not opposed to the Show itself or to U.S. participation, but took a negative view of DOD participation on the grounds that a military aircraft display would have an unfavorable effect on foreign policy. This, it observed, was based on McNamara's earlier decision, which Secretary Clifford had said he did not wish to overrule.

It was noteworthy, the letter continued, that DOD's position was founded on foreign policy, and not financial grounds; the amount of funding involved

⁴¹³ Note from Dr. Welsh to Secretary Clifford, attaching Rusk letter to the Vice President, May 1, 1968.

was very small compared with the dollar returns estimated by Commerce. Secretary Rusk had positively and emphatically discounted DOD's foreign policy argument. (Here the letter quoted from Rusk's letter to the Vice President.)

"It would be of substantial assistance to the new Ambassador to France and to Ambassador Bohlen if you could act to support our participation in the Paris Air Show," the draft letter concluded. "I hope you will find it possible to support the Council's recommendations, and particularly those of the Secretary of State. A decision to have Department of Defense participation is recommended, and in fact needed urgently if proper planning is to be devoted to this event."⁴¹⁴

A week later, Dr. Welsh reported to the Vice President that a cable had been received from Ambassador Shriver regarding a meeting of U.S. aerospace industry representatives in Paris. The Ambassador said the group was strongly in favor of both Government and industry participation in the Show, and feared a repetition of the inadequately planned 1965 exhibition. They believed, Shriver cabled, that lack of official participation would be extremely harmful to the U.S. political position in Western Europe.

The President of the group, the Association of U.S. Aerospace Industries, asked members whether they would participate "if worse came to worse and the U.S. Government did not participate," Shriver reported. Thirteen of the

⁴¹⁴ Dr. Welsh's draft of Vice President's letter to President, May 14, 1968.

16 firms represented replied that they would take part to some degree but not at the same level as they would if the Government were present.⁴¹⁵

On June 10, Dr. Welsh reminded the Vice President that it had been nearly three weeks since May 21, when "Clifford said he would reconsider the DOD decision and give you his conclusion." "Although your busy schedule is well known," Dr. Welsh said, "it would be unfortunate if your patience in awaiting a reply were interpreted as a decline in interest on your part. Perhaps soon you would want to call or have someone do so for you."⁴¹⁶

On July 8, Ernest Goldstein, a Special Assistant to the President, sent memoranda to Bohlen, McQuade, Agger and Dr. Welsh attaching copies of a memorandum he had received from Clifford which, Goldstein commented, "represents a slight shift in the DOD position."

In Clifford's memorandum, dated July 5, the Secretary said he saw no reason for changing his earlier decision. However, he said, since Commerce felt that a display of military aircraft was essential to the U.S. participation, DOD was willing to make six such aircraft available on a lease basis to their manufacturers for movement to Paris and display at the Show. Of the aircraft Commerce had requested be shown, one -- the SR-71 -- would not be available for security reasons, and a second -- the Army composite aircraft -- might not be on hand at the time of the Show. He said DOD could also provide

⁴¹⁵ Dr. Welsh memorandum to the Vice President, May 22, 1968.

⁴¹⁶ Dr. Welsh memorandum to the Vice President, June 10, 1968.

technical assistance on the flight line, if this were deemed necessary, with the agreement that Commerce and Transportation would pay the costs involved.

Goldstein's memorandum said he would appreciate the comments of the four addressees, and suggested an early meeting.⁴¹⁷

Dr. Welsh immediately passed this material on to the Vice President. In an accompanying memorandum, he noted that the Vice President had responded to his June 10 suggestion by asking him to call Clifford to learn the result of the Secretary's reconsideration.

"I talked with Clifford," Dr. Welsh reported, "and he said he had restudied the situation and come to the conclusion that DOD should not participate directly. However, he did go so far as to outline certain things DOD would do, if reimbursed." He noted that the Secretary's position was outlined in the enclosed memorandum to Goldstein. Copies would be distributed to interested agencies, Dr. Welsh said, and a meeting would be held to determine the next step.⁴¹⁸

The next day, Dr. Welsh thanked Goldstein for sending him a copy of the Clifford memorandum. He agreed that a meeting should be held promptly "in order to discuss the possibilities for translating DOD's proposal into

⁴¹⁷ Goldstein memoranda to Bohlen, et al, July 8, 1968, attaching Clifford memorandum to Goldstein of July 5, 1968.

⁴¹⁸ Dr. Welsh memorandum to the Vice President, July 8, 1968, with enclosures.

useful participation in the Paris Air Show." He suggested that in addition to representatives of State, Commerce and Transportation, the meeting include George Elsey of Clifford's office and Robert Akers, USIA Deputy Administrator and Chairman of the Interagency Exhibits Committee.⁴¹⁹

The meeting was held at the White House on July . There was discussion of the fact that industry firms were balking at displaying their aircraft on a lease basis, which imposed a prohibitive insurance fee, but were agreeable to take them over on a "bailment" basis, which required no insurance. Later, representatives of DOD and Transportation undertook to work out a tentative bailment agreement.

(To be updated at end of 1968)

⁴¹⁹ Dr. Welsh memorandum to Goldstein, July 9, 1968.

Updated material inserted 3/31/75
per memorandum & C. Welsh to California
1/13/69

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useful participation in the Paris Air Show." He suggested that in addition to representatives of State, Commerce and Transportation, the meeting include George Elsey of Clifford's office and Robert Akers, USIA Deputy Administrator and Chairman of the Interagency Exhibits Committee.⁴¹⁹

The meeting was held on July 24, 1968. There was discussion of the fact that industry firms were balking at displaying their aircraft on a lease basis which imposed a prohibitive insurance fee but were agreeable to take them over on a bailment basis which required no insurance. Later, representatives of DOD and Transportation undertook to work out an agreement under which Defense would maintain ownership of the planes but allow the aerospace industry to exhibit them at their own expense without insurance costs.^{419a}

As the year ended, preparations were well advanced for an exhibit keyed to the theme "Countdown Apollo" designed to capitalize upon the successful manned flight of Apollo 8 around the Moon and return to Earth.

⁴¹⁹ Dr. Welsh memorandum to Goldstein, July 9, 1968.

^{419a} Memorandum for Dr. Welsh, July 25, 1968, U. S. Participation in Paris Air Show.