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**MISCELLANEOUS COMMITTEE BUSINESS,
REPORTS, AND H.J. RES. 460**

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**HEARINGS
BEFORE THE
COMMITTEE ON
SCIENCE AND ASTRONAUTICS
U.S. HOUSE OF REPRESENTATIVES
EIGHTY-SIXTH CONGRESS
SECOND SESSION**

**JANUARY 12, 22, FEBRUARY 1, MARCH 31, APRIL 29,
AND MAY 6, 1960**

[No. 15]

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MISCELLANEOUS COMMITTEE BUSINESS, REPORTS, AND HOUSE JOINT RESOLUTION 460

TUESDAY, JANUARY 12, 1960

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

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

The CHAIRMAN. The hearing will come to order. Members will take their several places.

I will say that most of the committee session this morning will be executive. The first portion of it, for obvious reasons, will be in open session.

We might do this, while we are waiting for the other members, and it will be just a few moments—we might take up the report of the Patent Subcommittee first. I understand you have a report.

Mr. MITCHELL. Yes, Mr. Chairman. The members will recall that last August you appointed a special subcommittee to look into the problem of the national contracts with private industries as it concerns the contracts resulting from any expenditures of the taxpayers' money. At the first interim report to the full committee, which we made on August 25, the Patent Subcommittee pointed out that a preliminary investigation of the patents problem relative to the Space Act of 1958 disclosed a need for extensive hearings on the subject. At the same time the subcommittee reported that the National Aeronautics and Space Administration officials had disclosed an intent to ask for a change in the patent section of the law as part of the 1960 legislative program and I believe, Mr. Chairman, that only yesterday you introduced a bill—

The CHAIRMAN. It was a department bill—

Mr. MITCHELL. A department bill, which would constitute a change from existing law.

While the bill to make this change as such could not be introduced until the Congress began, the NASA officials concurred with the views of our chairman of the subcommittee that it would be advantageous to do the groundwork on this matter, which is an extremely complicated and technical matter, as soon as possible. The space agency thus managed to secure administrative approval and release of its new proposal—which the chairman introduced yesterday for the subcommittee to consider—by the end of last November.

Moreover, the new proposal was made available in time to circulate the proposed change among the witnesses who desired to appear before the subcommittee at its hearing. This saving in time allowed matters

to be expedited considerably. The subcommittee reopened hearings on November 30 of last year and we held extensive morning and afternoon hearings for a period of 6 days. During this time, more than 40 witnesses appeared before the subcommittee and a score or more of additional statements were filed for the record. These hearings were lengthy, often running into the night.

The subcommittee took the testimony on NASA's proposed change from every Government agency directly involved in the matter, including NASA, the Department of Defense, Atomic Energy Commission, the national Patent Office, and it received testimony of various pertinent officials from other Government agencies. All private witnesses who requested to be heard were heard, and I think that is important. A number of others were specifically invited. Witnesses came from every part of the Nation to give their testimony. They primarily represented industry, the legal profession, particularly insofar as patents are concerned, but private individuals also appeared before us.

Overall, the subcommittee created a substantial record, and we believe that we have sufficient basis to make some recommendation to the full committee within the next few days.

On January 7 of this month the subcommittee met again in executive session and determined that a change in the patent section of the Space Act should be made. However, at that time committee members desired a certain amount of additional information, plus analysis of ultimate proposals which were presented at the hearing.

Now, these requests have now been taken care of, and we have set a second executive session, Mr. Chairman, for 10 o'clock in the morning. I understand you are not planning a full committee meeting for tomorrow morning.

The CHAIRMAN. Not tomorrow; no.

Mr. MITCHELL. It appears the members of the subcommittee are in general agreement on the course of action to be taken. Insofar as specific inquiries of the members are satisfied, we will be in a position to make a formal report to the full committee.

I might say, Mr. Chairman, the members of this subcommittee are Mr. Fulton, Judge Chenoweth, Mr. Bass, Mr. Quigley, Mr. Daddario, and Mr. King.

In my brief time, as a member of this body, I have never seen a group work more diligently or be more dedicated toward finding an answer to a problem than was this group and I think the result of it, Mr. Chairman, was that we can substantiate any action that we recommend to the full committee and the end result I think will reflect credit upon you and each member of this committee.

The CHAIRMAN. Thank you, Mr. Mitchell. I had understood it was a preliminary report that you were making this morning. I would like to say this: That the committee has worked, to my knowledge, diligently and well. I sat in the early part of your first hearing. It was not easy for the members to leave home and come all the way to Washington for these hearings at that particular time. It was very difficult. I know for some of the members it really was a hardship to ask them to come but they did and you have done a good job and we look forward to your report with much interest.

There is no action to be taken this morning on that, but I did want to have this preliminary report. At this time I want to say this, while most all of our members are here.

Mr. FULTON. Before we leave that subject, may I comment, with your permission?

The CHAIRMAN. Yes. I recognize Mr. Fulton.

Mr. FULTON. Mr. Mitchell has been a fine chairman. Other members have worked hard. It is a serious problem because it affects the patent structure not only of this particular field but of all the patent matters that might come at any place in Government agencies. So that it has been something that has been approved seriously. The committee has a remarkable unanimity of mind on the subject, as Mr. Mitchell has reported and we all have felt. I compliment him and the other members and I want to say we have asked for the expertise advice of our good friend Mr. George Feldman on this subcommittee, who is going to look over the various provisions in other departments, as well as take up some of the Senate provisions so that we can have an overall survey made, prior to making to this full committee our final recommendations. Is that right, Mr. Mitchell?

Mr. MITCHELL. We will take that problem up in the morning. Mr. Feldman, of course, is serving.

The CHAIRMAN. Mr. Feldman is here this morning and I am going to say on behalf of the full committee we appreciate his willingness to serve with the subcommittee also. It is a difficult matter. It is a very technical matter. It took lawyers—of course, I expected them to do a good job because every member of this committee is doing a good job and we naturally expect it but we are pleased when it is accomplished. At this time when we are here, most of all of us on the committee, I want to remind you that last session this committee unanimously passed a resolution of this committee in reference to the fine work that our friend and member of this committee, the senior Democrat on the committee, Mr. John W. McCormack, had performed in reference to space work.

At this particular time, Mr. McCormack, it gives me lots of pleasure to formally present the committee resolution to you. This, to my mind, is an important occasion. It is an impressive occasion, to all of the members of this committee.

I was a member of your select committee and other members of this committee likewise were members of your Select Committee on Astronautics and Space Exploration, which was the forerunner in the 85th Congress of the present standing committee of Congress.

Under your leadership, as every member of this committee knows, was passed legislation establishing the National Aeronautics and Space Administration, which we have in existence today. Under your leadership as chairman of that committee the Congress and the country laid the foundations for what may be some of the most important and far-reaching problems facing the country during this and coming generations ahead of us.

I think personally you did a most excellent job, so much so that the committee spontaneously passed the resolution I referred to. It is gratifying to me, therefore, on behalf of all of the committee members, and especially those who served on the subcommittee, and in appreciation of the esteem, the affection and the regard which we feel toward you as an individual and as a Member of Congress, and chairman of that select committee, I take pleasure in presenting this resolution of affection and gratitude from the Committee on Science and Astronautics.

I will ask Mr. Ducander, director to the committee, to read this, if he will, on the formal presentation.

Now, if you will, Mr. Ducander, read that, I would appreciate it.

Mr. DUCANDER (reading) :

COMMITTEE ON SCIENCE AND ASTRONAUTICS,
U.S. HOUSE OF REPRESENTATIVES,
Washington, D.C., August 20, 1959.

RESOLUTION OF AFFECTION AND GRATITUDE EXTENDED TO JOHN W. McCORMACK

Whereas the Honorable John W. McCormack, majority leader of the U.S. House of Representatives, and an outstanding American, assumed, in addition to his heavy responsibilities as majority leader, the chairmanship of the Select Committee on Astronautics and Space Exploration of the 85th Congress; and

Whereas his wisdom and sagacity in the conduct of hearings, his deep sense of human values and dynamic leadership provided the guidance and prime motivation for the other members and staff of the Select Committee on Astronautics and Space Exploration; and

Whereas, because of his intense interest, over many years, in scientific achievement, one of our Nation's most important sources of strength, and through his understanding of the many problems attendant to marshaling, by means of legislation, the national scientific resources into a cohesive, unified effort, he was instrumental in molding the public law creating the National Aeronautics and Space Administration: Now, therefore, be it

Resolved, That his colleagues of the Committee on Science and Astronautics of the 86th Congress, the successor to the Select Committee on Astronautics and Space Exploration, acknowledge in the highest terms the invaluable contributions he has made to the preservation of the United States as a symbol of intellectual freedom for all men everywhere, and extend to him their highest regard, warm affection and deepest gratitude and appreciation for a fine job well done.

And that is signed by all members of the committee. [Applause.]

Mr. FULTON. And I might add, we really mean it too.

Mr. McCORMACK. Mr. Chairman, may I be recognized.

The CHAIRMAN. Mr. McCormack.

Mr. McCORMACK. Mr. Chairman and my distinguished colleagues, members of our committee, to say I am deeply touched by this I know will be accepted by each and every one of you as not a superficial observation but as an expression of my deep feelings and constitutes the truth.

In my service in the Congress, by reason of my election as majority leader for the first time in 1940, I sort of took a departure as far as ever being a committee chairman is concerned and if I had not been elected majority leader I would have been chairman of the Ways and Means Committee a number of years ago. I was next to Mr. Doughton on the committee, so far as seniority of service was concerned, at the time of his retirement.

So I took a different departure and I never thought I would see the day when I would be chairman of a committee in the Congress again. But fortunately for me it happened last year in connection with the Select Committee on what is called for brevity, Outer-Space. I do not know of any service that I have had that was most pleasant.

The members of the committee were confronted with a very serious question and a very serious problem, because as we know, research and development is going to revolutionize the world. I am not talking from a military angle. If we had a peaceful world we would have serious problems confronting us, in connection with the great changes

that are going to take place, in our impact upon both the economic life of a nation and the economic life of individuals.

I can see as a result of these great discoveries when they become applicable to human conditions, that unless you and I, and other legislators, look ahead and anticipate and try to penetrate and get a glimpse so that we can avert these great changes in a government of laws, rather than through frustration might master us through a government of men. We will be faced with difficulties. Our committee is very important in that respect in my opinion. This committee is of vital importance, not only today, but its importance is going to grow and grow, because this is an important step on the part of the House of Representatives for recognition of what might be termed for brevity the new world to come.

The last 20 years we have seen the atomic age, the nuclear era, and the thermonuclear era all blending into one. We thought each one was separate and distinct by itself but then we see new advances made, frightful, so far as human destruction is concerned, in case of war, but tremendously beneficial in times of peace in the benefits that will flow to human beings throughout the world. Yet we have seen in that period of 20 years mankind has undergone, as I view it, a more intense period than for the preceding thousand years in the history of man.

Now we are in what might be called the era of outer space, all within a period of 20 years, and the formation of this committee is a recognition from the legislative angle so far as the House is concerned, as I saw it and dreamed it, of penetrating, studying, analyzing, and through legislation guiding and directing our country to anticipate and to avert these great changes that we know are going to take place, so that they will serve and preserve a government of laws, and not through frustration master as a result of the government of men. That is broad. I did not mean to get into that, but I wanted to give you a little broader picture of some of the broader ideas and pictures that ran through my mind when the select committee was in existence and when I and others were doing everything we could to put through a resolution last session to establish the standing committee. It was more than just a committee. This committee is of far-reaching importance. There is no more important committee in the Congress of the United States, and as time passes the value and importance of this committee will increase and increase.

So far as this honor is concerned, I shall always treasure it, not only myself, but Mrs. McCormack also. As I said, I never expected to become a chairman, and fortunately I did.

While I am the direct beneficiary of this signal honor—and it is signal in my life and it would be in the life of anyone—I would not have been entitled to it without the fine cooperation I got from my colleagues on the select committee—and I say “my colleagues” without regard to party. When I mention my colleagues I have not got party considerations in mind. I never worked with a finer group of legislators. I am proud of that committee. Everyone was a dedicated man. Every member of that committee grasped the spirit of the committee and its importance, and I am sure that every one of them, in their own thoughts, penetrated the future in the way that I did, to at least the limited extent that I did, and saw 10, 15, or 20 years from now what

the impact of these great discoveries will be, when capable of practical application in the life of nations and in the life of human beings.

I have referred to the economic aspects, but there are many other aspects. However, as you and I know, the economic aspects of a person's life and a nation's life have a great influence upon its political and social changes. I am deeply touched and in accepting this I accept it for each and every member of the select committee and the staff. I cannot pay too much credit to the staff of the select committee. They did a wonderful job. I am deeply indebted to them; and, when I say that, also I know every other member of the select committee will join with me. So, while I am deeply touched and shall always treasure this, I want you to know, Mr. Chairman and my colleagues of the standing committee, the success of the select committee rests in you.

In looking at this—I am going to have it framed. Of course, Mrs. McCormack will determine what kind of a frame it will be, and just where I will be permitted to hang this—every time I look at this, I shall have memories not only of my colleagues who served on the select committee with me, but those of you, you and I, who are serving on this, the permanent committee in this important field.

And the thoughts in my mind will always be ones of deep gratitude to members of the select committee for their fine cooperative spirit shown which resulted in the success that everyone admits the select committee did have, and to the staff of the committee, who all contributed markedly in the success of the select committee, and I shall always remember, as I look at this with the greatest of pleasure, each and every member of this committee.

I am deeply touched. I am very grateful. [Applause.]

The CHAIRMAN. Thank you, Mr. McCormack. The resolution will be spread upon the records of this committee, and any other appropriate action will be taken.

Now, this committee meeting this morning was advertised as an executive committee session. I see no reason, however, why we should not have some of these reports in open session.

I might say, too, that we have Mr. Feldman here—Mr. George Feldman. Would you stand up? [Applause.]

His name was mentioned. He was with the select committee as director. We are happy to have him this morning. Now, I see no reason why we should go into executive session on these committee reports. We have here, for instance, our colleague and friend, Mr. Anfuso, who made the trip to Europe, to London especially, on behalf of the committee. Mr. Anfuso, would you give us a short report on your trip and then I am going to call on the senior Republican to supplement your report.

Mr. ANFUSO. Mr. Chairman and members of the committee, we first went to London on behalf of this committee to attend the International Astronomical Federation Conference. I might say that was a huge success and our delegation did a magnificent job, and we took occasion at that time to meet the Russian delegates. I thought it would be of special significance to try to become acquainted with the Russian delegates because later on they could serve a very useful purpose in the work of our committee, and one of the gentlemen that we met was a Mr. Saidoff, who later became President of the International Astronomical Federation. Mr. Saidoff was one of the scien-

tists who was responsible for the Moon shot, and I might say that Mr. Saidoff was very helpful to me when I went to Russia, in getting me to meet the other scientists responsible for the Moon shot.

At this time I want to specifically state for the record that my trip to Russia was not an official committee trip and that, of course, is no fault of the chairman, no fault of the committee, and no fault of the Congress. That is, of course, due to the fact that at this time it is not administration policy to have an exchange of committees. That was understandable, and so I sort of selected an offhanded committee of experts who accompanied me on this trip, and it was all done at their own expense and not in an official capacity.

While it was unofficial, I might say the chairman has shown great interest in what we did there, and also this committee.

Of course, we knew that the Russians were going to hit the Moon, and that is why we got there just on the very day that they hit the Moon, and I might say that our group was the center of attraction at the Moscow Observatory when we were watching for the time and the exact minute when the rocket would hit the Moon, and that happened at exactly 12:03, on September 13.

Now, why do I say we were the center of attraction. Only merely because we were foreigners: We were Americans. I might say the thousands of people who were there took this as a matter of fact. They knew they were going to be successful and when it was all over they just walked away as though nothing had happened at all. Had that occurred in the United States, you cannot imagine the demonstrations that would have followed, but there was absolutely no demonstration, and they just walked away as though to say, "well, we have accomplished this and let's go to the next task."

I took occasion then to speak to the Moscow radio, as I did to this gathering, and I told them I was very gratified to be there on this occasion, that the American people extended their congratulations to the Russian people as indeed this was a great achievement and I wanted to be the first to congratulate them. I also stated I hoped that all this would be in the cause of peace, because, I said, that seems to be our only mission here—to try to get international cooperation on the peaceful uses of outer space.

Later on, we met with the scientists at a very informal get-together, a roundtable discussion, and this was a free-for-all.

We discussed international cooperation, and we discussed the creation of a permanent committee in the United Nations.

They called my attention to the fact that they were not members of the permanent committee of the United Nations and they gave the reason it was overbalanced—there were too many members on the Western side. I said as far as I was concerned the question of numbers was not the important thing, but rather to get people to go to talk about the peaceful uses of outer space; and later I met Mr. Khrushchev and discussed the very same situation and when I came back to the United States I came back with the deep feeling that we must do something in this work, because here we have a dedicated leadership on the part of the Russians, followed by the people themselves, who are bent upon overtaking the United States and beating us in all fields—and I want to stress that: That they are bent and determined that they should beat us in all fields.

They are willing to make all kinds of sacrifices to attain this goal and they tell you very frankly that after all, they had nothing before, under the czars, and the first thing they want to show you is the way the czars lived and of course we saw that. They said, we had nothing then, and at least we have something now. We are willing to go without the proper clothing—and indeed their costumes are all the same. The women were dressed in sack dresses—and I am not talking about the sack dress which has become popular in the United States. They wore absolutely no lipstick, and their shoes were only according to size. And they said “We will wait for the things that you have, but in the meantime we are going to achieve supremacy.” As I said, the men and the women both looked alike. I could not tell the difference many times. They worked together in industry and I saw many of their plants and they looked together just as though they were one. I could not tell the men and women apart, at least until I got very close to them and talked to them.

So, Mr. Chairman, this is not a report. We are filing a full report as to the London meeting and my personal report on Russia, which is an extensive report, which I would like every member to read. I do want to say that we do have a job cut out for us, and that there is no time to be lost. This is not the time to hesitate—we must go full speed ahead on this research program and we have got to overtake the Russians in this field, and at the same time we must talk peace. At the same time we must try to obtain international cooperation.

I was glad when I came back from conversations which I had with the State Department and others, that eventually the Russian Government did come into the permanent committee of the U.N. They are now a member. We did give a lot as to the membership. We gave them more members than they had, which I think is progress. We have also got to make a great deal more progress with our allies.

I found in going to the Western Powers in our allies, that we have marvelous scientists that we can take advantage of and they are all willing to cooperate with us in this space research and in the peaceful uses of outer space. I think we should take advantage of international agreements. We should take advantage of their willingness to cooperate and do everything we can in this committee, first of all to try to place the United States foremost where she should be, because I think that is what the people of the world want. I think that all people, even those behind the Iron Curtain, would like to see the United States as a leader, because they know we are an unselfish nation and we do not desire any of their lands or anything else that they have and that all we want is to live in peace under freedom.

So, Mr. Chairman, I would like to urge, as a single person, and I am sure it is the feeling of all of these members, that we do everything in our power to speed up our space research and try to obtain as much international cooperation as we possibly can because after all, that is one of the reasons the act was created—to seek international cooperation—and I am afraid we are not doing enough of it. We should be doing a great deal more.

In passing, I might say, as we read the papers as I came back, we see where others are trying to take away certain powers from this committee. And that we must not permit. There were certain powers which were given to this committee in this exploratory field which we

must maintain. You know exactly what I am talking about, Mr. Chairman, and I know they are the feelings of the other members too.

We read statements of transfers that are attempted. I think we ought to stop that and go on with the great job which has been commenced.

I want to take this opportunity to thank Mr. McCormack for starting us on our feet and you, Mr. Chairman, for continuing the great work which has been done.

The CHAIRMAN. Thank you, Mr. Anfuso. I want to say from the Chair the purpose of the trip was the London Conference and the visit which Mr. Anfuso made to Russia was not official and he made that on his own, and not on the committee authorization.

Who was your senior Republican to the London Conference? We would like to get a report from him.

Mr. ANFUSO. Mr. Van Pelt.

The CHAIRMAN. All right, Mr. Van Pelt, would you give us a report on your observations at the London Conference.

Mr. VAN PELT. I certainly concur in the views expressed by Mr. Anfuso. I believe there were over 30 nations that were represented, not by members of their legislative bodies, but by different people in those countries that are interested in this subject, and they did stress, in all of the papers that were given, the peaceful purposes, plus the fact of the legal aspects that must be considered in the future with regard to outer space.

It may be interesting to note that the United States was I believe the only Government that had legislative representatives there, and they were most appreciative, and we felt pretty good about it—that we were expressing our interest in this Conference.

Then part of us went to Brussels and viewed the cooperative efforts that Belgium is making, and the installations that have been turned over to the cooperative movement. I believe it is the Air Force, is it not, that is cooperating, and a number of the agencies, plus the Belgian Government which have given the facilities and turned over a great deal of equipment where scientists from the participating countries can go and extend this research.

I believe that beyond that we probably should wait for the formal report for more details.

The CHAIRMAN. Fine. We will be happy to have your formal report when it is ready. We thank you gentlemen for doing a great job for the committee.

Mr. VAN PELT. In that connection, perhaps all of the members of the committee do not know that Mr. Hall is confined to a hospital in New York. I don't know how he is progressing.

The CHAIRMAN. Was he on your trip?

Mr. VAN PELT. Yes.

Mr. ANFUSO. May I say Mr. Hall was very cooperative and worked as well as any member. Would you say that?

Mr. VAN PELT. Yes.

Mr. ANFUSO. We hope he comes back soon.

The CHAIRMAN. Mr. Hall is not well. If the members of the committee would write him, he would appreciate it I am sure.

The committee should send him flowers.

Mr. VAN PELT. I think he should be remembered by the committee and the members.

The CHAIRMAN. Would you move a resolution?

Mr. VAN PELT. Yes.

The CHAIRMAN. You would move that an appropriate resolution be framed and on behalf of the committee sent to Mr. Hall.

Mr. VAN PELT. Yes.

The CHAIRMAN. We had another committee, one that went to the Pacific coast. Mr. Quigley or Mr. Moeller—Mr. Moeller, you have a report for the Pacific coast trip.

Mr. MOELLER. Do you want it read, Mr. Chairman? It is about four pages.

The CHAIRMAN. Yes, if you will. Then we can formally approve the report and have it filed.

Mr. MOELLER. In response to an invitation on the part of the Secretary of the Air Force to visit and inspect missiles and space contractors and Air Force installations, the group left Washington on November 8 aboard a special mission aircraft. The following members were in the party: Hon. James M. Quigley, Hon. Walter H. Moeller, accompanied by John A. Carstarphen, Jr., and Lt. Col. Francis J. Dillon of the committee staff, Col. George B. Munroe, USAF, from Air Force headquarters, Maj. Robert W. Meade, USAF, escort officer, and Capt. Roy W. Stroud, USAF, escort officer. The Honorable Gordon L. McDonough joined the group during its visit to the Air Force Ballistic Missile Division.

The first installation visited on Monday morning was the Air Force Ballistic Missile Division. The group was given a concise and well-planned briefing on the overall missile program, with particular emphasis on the larger space vehicles. Maj. Gen. O. F. Ritland, Commander AFBMD, acted as moderator and introduced various officers on his staff who took part in the briefing.

Monday afternoon was spent at the Douglas plant in Santa Monica. The opening briefing was conducted by Mr. Donald Douglas, Jr., and members of his scientific staff. This program was directed primarily to the Thor. Following the briefing, the group visited the plant where the Thor is being assembled.

Tuesday morning the group was taken to the North American Rocketdyne Division in the Santa Susanna Mountains, where we visited test stand facilities and observed the test firing of one 150,000-pound-thrust engine and one 60,000-pound-thrust engine. We also visited the control center blockhouses, and completed the inspection with a visitation to a part of the engine assembly and viewed the mockup of the 1,500,000-pound-thrust F-1 engine.

We then proceeded to the Jet Propulsion Laboratory in Pasadena on Tuesday afternoon. At JPL, Dr. William Pickering and his staff showed the group various facilities, and we witnessed the test firing of a small solid fuel rocket engine and a test of a high-energy fuel liquid rocket engine. Also, the group had an interesting discussion and visit with Dr. Keith Glennan and Mr. Richard Horner from the NASA headquarters and Dr. Dubridge of California Institute of Technology.

As the group proceeded to leave Los Angeles Airport on Wednesday morning, we had a short briefing by the North American Aviation

group in their office on the airport grounds, following which we inspected a mockup of the B-70 airplane. We also had the opportunity of meeting and visiting with Mr. Scott Crossfield, test pilot of North American X-15 airplane. The group also had an interesting briefing with motion pictures covering X-15 flights and program.

Wednesday morning the group flew to Mather Air Force Base and visited Aerojet-General facilities on the outskirts of Sacramento. This installation contains both a liquid rocket plant and a solid rocket plant. A review of various facilities was held, including the plant facilities for the construction of the engine for the Titan. The group also visited the mixing facilities for the solid rocket propellants, and witnessed the test firing of two 150,000-pound rocket engines, an 80,000-pound rocket engine and a short firing of a liquid oxygen and liquid hydrogen rocket engine of 100,000 pounds thrust.

Thursday was spent inspecting the Ames Research Center on the outskirts of San Francisco. The Honorable George P. Miller joined the group for this visit. Mr. James P. Gleason from NASA headquarters was also with us at the Ames Research Center, as was Dr. Smith J. DeFrance, Director of the Center. The group visited the excellent facilities at Ames, and observed the test firing of some materials to be used in missile nose cones, also other high-speed flight tests, and inspected high-temperature test facilities. We also observed a short test flight of the X-14 VTOL airplane.

Thursday afternoon was spent at the Lockheed Missile and Space Division at Sunnyvale, which adjoins closely to the Ames facilities. Lockheed presented a briefing devoted mostly to the Agena vehicle, for which they are the prime contractor and systems manager. Also the group inspected guidance and control mechanisms and associated intricate wiring systems.

The Honorable J. Edgar Chenoweth joined the group Thursday evening and remained for the rest of the tour.

Friday the group was privileged to visit Vandenberg Air Force Base and the Pacific Missile Range. Maj. Gen. David Wade was represented by his deputy commander, Colonel Powell. This installation contains operational, R. & D., and training sites, and in the opinion of the group was one of the most interesting points visited. After an explanation of the complex establishment of the Pacific Missile Range and its use by all the forces, with the coordination required for such utilization, the group visited Atlas launching pads, both operational and training, and observed at close range operational block house facilities as well as the guidance controls. The high point of the visit was an inspection of the hard Titan installation presently under construction. This visit concluded with a visit to the ground control communications installation and the Thor Discoverer launching pad where a vehicle was being prepared for launch.

The following day, Saturday, the group visited the Convair Astronautics Division of General Dynamics Corp. at San Diego. This plant was one of the largest the group visited, consisting of 21 buildings where over 10,000 people are employed. Convair is the systems manager for Atlas, and following a briefing by Mr. J. R. Dempsey, vice president, the group made an extensive tour of the plant, observing the assembly of the Atlas missile and the mockup of the Vega and Centaur second stage vehicles. While at San Diego the group had

the privilege of a meeting and dinner with Dr. Charles Critchfield, director of research for Convair, who had just publicly declined the President's appointment as Director of the Advanced Research Projects Agency.

Sunday was spent at Holloman Air Force Base and White Sands Missile Range, N. Mex. The briefing at Holloman was led by Maj. Gen. Daniel E. Hooks, commander, AFMDC, and included a full description of Army, Navy, and Air Force programs at White Sands. The group inspected various facilities including the stratosphere chamber, N-5 guidance system, and the Aeromedical Facility. The Honorable Walter H. Moeller left the group at this station and returned to Washington, D.C.

Monday's program included a tour of the Martin Denver plant on the outskirts of Denver. This plant is a new facility, employing some 8,000 people, and has immediately adjoining it an adequate static test facility in the foothills of the Rocky Mountains. Martin Co. is the systems manager for the Titan missile, and inspection of the plant facilities enabled the group to observe the complete installation of the airframe, guidance system, tanks, and rocket engine. The Martin president, Mr. William Bergen, was present to assist in the conduct of the inspection.

Upon completion of the visit to the Martin plant, the group proceeded by helicopter to the Boulder Laboratories of the National Bureau of Standards and spent the afternoon visiting the facilities at the Laboratory, with primary interest in radio propagation laboratories, radio standards laboratory, and the cryogenic engineering laboratory. Following this inspection, the group returned to Lowry Air Force Base at Denver. Brig. Gen. Charles H. Terhune, Jr., Deputy Commander, AFBMD, accompanied the party to the various west coast installations and the Martin Denver plant.

In view of the fact that Mr. Moeller had left the group at Holloman and that Mr. Chenoweth had been unable to accompany the party to San Antonio, it was felt advisable to cancel the trip at this point and not make a visitation to the School of Aviation Medicine at San Antonio with only one member. The party therefore returned to Washington Tuesday afternoon.

The CHAIRMAN. Mr. Chenoweth, you were there with the committee. Would you like to make a statement in connection with that report?

Mr. CHENOWETH. Yes, Mr. Chairman.

Mr. Moeller has given a very accurate and factual statement of what the committee did while I was with them. I was very disappointed I could not accompany the committee during part of the trip. I could not leave my district until the committee was halfway through. I would say the most impressive installation I was at was Vandenberg Air Force Base in California.

I wish every member of the committee could see what we are doing there. It might dispel some of those ideas that are so prevalent that we are behind Russia in everything, that we are at the mercy of Russia, that we are doing nothing in space, nothing in missiles, and that we are completely helpless. I wish they could go to Vandenberg and see what they have got there and all they have to push is one button and then it's all over, and then you will get some idea of what we mean.

But I thought this trip was very helpful and encouraging and instructive to me. Atlas and Titan are the two missiles we are depending upon. We are very proud of Colorado to have the Titan plant there under the operation of the Martin Co. I think most of these are making fine progress.

We hear so much in committee sessions these days about our failure in all of these lines that I think it is reassuring to the members of the committee, and to me at least, to see what we have accomplished.

I think that covers it. I greatly enjoyed my association with the committee.

I am sorry Mr. Quigley is not here; I know he has some personal observations he would like to make.

Thank you.

The CHAIRMAN. Should Mr. Quigley at some later date want to put something in writing for the committee we would be glad to have the benefit of your individual observations. Did you have something you want to add, Mr. Moeller?

Mr. MOELLER. I would just like to append this. To me it was a most enlightening trip. I wish it were possible all members could have been there. You simply cannot understand much of what you hear here in committee meetings unless you see with your own eyes some of the demonstrations that we saw. I am sure Mr. Miller will agree with this.

I hope that some time in the future all of the members of the committee will have an opportunity for a similar inspection trip. I would also like to append this, Mr. Chairman.

I think much of the credit for a trip of this sort is due to the men who are in charge. I am thinking primarily of the Air Force fellows who take care of this. Colonel Dillon probably should not be hearing this now but I think that Colonel Dillon and Major Meade did an outstanding job. Every little detail in the minutest form was worked out for this committee every minute of the day so that we knew exactly where we were going, transportation was there, and there was not a single hitch in the full 10-day inspection, and I think credit is due to these men for the role that they played.

The CHAIRMAN. You have an excellent report. You evidently were as observant as could be all the way through there, and if there is no objection the report will be filed for the committee.

Mr. FULTON, do you have a question?

Mr. FULTON. I want to compliment the various members because they certainly all are turning out to be eager beavers. I still remember when I was on the select committee and moved over here and used the word "hypergolic" for "fuel." But, when I heard Mr. Moeller trip lightly over a few of those terms after 1 year on the committee, I knew he had arrived.

I would like to have the reverend explain one thing, because I am a man of the suit and not of the cloth. He referred to the word "visitation." Now, what the heck is the difference between a visit and a visitation? You may have made a visitation one place and visit the other.

The CHAIRMAN. Without objection the report will be filed with the committee.

We have a very important report here from a distinguished member of our committee, that is Mr. Teague of Texas.

Mr. Teague, would you give us your report?

Mr. TEAGUE. Mr. Chairman, with your approval Congressman Daddario and I, accompanied by Lieutenant Colonel Dillon of the committee staff and Major Chickering of the Air Research and Development Command, visited research and development facilities in Dallas, Tex., on December 30 and December 31, 1959. The companies visited included VARO, Texas Instruments, Temco, Chance Vought.

The visits were most profitable and the information presented will be of tremendous value in the accomplishment of our mission in Congress.

Each of the companies discussed its most important projects for both Government and commercial uses. The following is a brief of the information presented:

VARO: Mr. Robert Jordan, president of VARO, accompanied by several of the vice presidents of the company, discussed a method of anti-ICBM defense. This is often referred to as the fireball technique and includes the aiming of electromagnetic forces at the incoming warheads. VARO has had a study contract for this project but does not have an active contract at this time. The details of this project are classified. As this is a unique and new approach to this facet of defense of the Nation, I would recommend that our committee look into this program in greater detail.

Texas Instruments: Mr. Pat Haggerty, president of Texas Instruments, led a team of corporation executives in a briefing covering in some detail, a philosophical approach to the problems of big business dealings with the Government in this era of mushrooming technological changes. And Mr. Chairman, Mr. Haggerty made I thought one remark that was very revealing to all of us, that in many of their contracts it took longer to complete the contract to do the job than it did to do the job they were asked to do. Texas Instruments has had fantastic growth in the last 10 years and is now one of the ranking electronic firms in the country. Their specialty is in the field of transistors and microminiaturization. Their new facilities and the techniques demonstrated to us are items that each member of our committee cannot afford to miss. I strongly recommend a visit by as many members as possible to this company which is doing a fantastic job in the advancement of science.

Temco: Mr. Robert McCulloch, president and general manager of Temco, introduced Mr. R. E. Galer, vice president for engineering. Mr. Galer conducted a briefing and discussion covering the Temco facilities and programs. The chief program of Temco is the rocket-powered, air-to-surface, Navy missile, "Corvus." This missile is air launched from Navy aircraft and is in test now at Point Magu, Calif. Other advanced Temco products include the "Teal" rocket-powered target drone and an avionic surveillance system currently being evaluated by the Navy. Temco does considerable aircraft modification and overhaul and also subassembly production on sub-contract for several aircraft manufacturers.

Chance Vought: Mr. C. J. McCarthy, chairman of the board, and Mr. W. P. Thayer, vice president, conducted a briefing on the Chance Vought facilities and programs.

Chance Vought is prime for the production of the Scout space vehicle for NASA and the Air Force. This is a four-stage, solid-

propellent rocket capable of launching a payload of 300 pounds in a 300-mile orbit.

Chance Vought was also teamed with Boeing Aircraft in the DynaSoar competition. Their part was the design of the front part of the DynaSoar vehicle. As you know, Boeing won the competition, but there will be new competitions for each of the subcontractors.

Other space program plans were also discussed as Chance Vought has recently formed an astronautics division.

Another facet of their research program is directed toward anti-submarine warfare. This includes the use of buoys and the interrogation of the buoys by aircraft.

Their greatest effort in R. & D. is directed at the SLAM project, short for "supersonic low altitude missile." This project, now in competition throughout industry, will utilize the Pluto nuclear ramjet engine and has a tremendous capability as a strategic weapon of the future. The full weapon systems approach was presented by Chance Vought. As this may be the first nuclear-powered airborne weapon, it is my strong recommendation that our full committee be briefed on the Air Force's intentions with regard to this project.

In conclusion, the trip was most profitable and of great value to Mr. Daddario and myself in preparation for this session. I urge others to make the same trip so they can see firsthand the tremendous capabilities that exist in our industrial complexes. Trips to other Government industry facilities are also needed so that members of our committee may see the progress being made in science and astronautics.

It seems to me our committee might take an interest also in Mr. Haggerty about his statement that it is taking longer to complete the contract than to complete the work they were asked to do.

The CHAIRMAN. That is an excellent idea. Mr. Daddario, do you have anything?

Mr. DADDARIO. I concur with the report, Mr. Chairman. I would like to accentuate just one point Mr. Teague has brought up, and that is a feeling with the Government these companies all have had certain critical comments to make, and at Texas Instruments one of the compelling arguments I heard, and one of the things I think this committee should look into, is this simple statement Mr. Haggerty made—when they are spending their own money on contract research and contract development they can spend it three to five times more efficiently than they can spend the Government money.

I think these are the kind of things which are slowing down progress and should be looked into.

The CHAIRMAN. Thank you.

If there is no objection, your committee report is fully adopted.

Mr. Wolf, you made a trip on behalf of the committee. Would you give us a brief report on it?

Mr. WOLF. Thank you, Mr. Chairman and gentlemen of the committee.

My trip was a little longer than any of the others discussed here in terms of time. I left November 4 and returned December 9. If I take the same degree of time the others have in relation to the time expended, I think we would be here a couple of days.

The CHAIRMAN. Give us what would be of help to the committee from your trip there.

Mr. WOLF. I think the outstanding thing from the point of view of the space program, which has been discussed in great detail this morning, was a visit to two of the Pacific tracking stations for our deep space program. I would like to outline a little of that work.

I have more material requested, both from organizations and the companies involved, which is not here and I would like to present a more detailed report about the 1st of February, if I may.

The CHAIRMAN. Let us take it all up in February, then.

Mr. WOLF. I would like to discuss the other phase of my trip today, Mr. Chairman.

The CHAIRMAN. Fine. Go ahead.

Mr. WOLF. The purpose of this trip, from my point of view and in discussion with the members of the committee and the staff, was to ascertain how the scientific and technological programs of these nations may be aided by the United States. I will discuss which nations in a few moments.

Second, to investigate the possibilities of an extensive program for India, Japan, and Pakistan in the field of health, scientific education, and preventive medicine, with American technical assistance.

Third, to study present agricultural methods of these nations, find out their needs, and formulate ways to meet their needs through the use of our scientific know-how.

The first point visited on my trip was the World Food and Agriculture Conference in Rome. Next I went at my own expense for 4 days to Czechoslovakia. The highlight of my Czechoslovakia visit was a 3-hour conference with the First Deputy Minister of the Food Industry there. A transcript of our interview is on file, if anyone wishes to see it. I don't think I will take the time of the committee now. I might say it is of great interest.

I might also say that the Minister there obviously demonstrated a lack of knowledge of American methods of agriculture and our scientific know-how in agriculture. One of the fascinating things, as I was leaving the building, was a propaganda display I noticed of American cereals—trademarks and the whole works—sitting there in this display case in the lobby of the Ministry of the Food Industry, and I could not help but notice a few cereal products from my district.

From Czechoslovakia I went directly to Pakistan, India, Thailand, Singapore, and to the Hawaiian Islands via Tokyo.

In the Hawaiian Islands I visited our deep space tracking station at Southpoint on the "Big Island" and our Pacific Missile Range tracking equipment on the island of Kauai.

I am not going to bore the committee with a long, detailed analysis of this trip; however, I would like to make a few pertinent observations on the trip, and give you the benefit of a couple of thoughts, which I developed as a result of my trip, on the legislative needs, as I see them.

The World Food and Agriculture Conference in Rome was the meeting place of some 83 countries of the world. It is significant that only Yugoslavia and Poland of all the Iron Curtain countries were represented here and that Russia, who speaks always for the people in its propaganda, was not there, and even as an observer had no one

there. Czechoslovakia was sitting there trying to get involved in the Conference but refused to pay their dues and so obviously were refused.

The leaders of these countries had gathered together there to plan and integrate means by which the food and agricultural production know-how could be transmitted from one area of the world to another. The FAO was broken up into various committees, depending on the area of basic interest. I attended as an official observer, had all the privileges of a delegate except that I could not speak officially. I could attend any conference or any meeting. Conversation was not precluded to me, and I was able to discuss freely with the delegates of many countries of the world the following five proposals which I presented:

1. Place in deposit with the United Nations \$250 million a year of food and fiber resources which would be used for economic and social development in underdeveloped areas;

2. The creation of regional agencies in underdeveloped areas under the FAO and United Nations special funds, to integrate technical assistance and development projects with food uses and distribution.

3. Establish an International Governing Board comprised of importing and exporting nations to determine how, and at what level, food and fiber should be given to importing nations.

4. Free soft currency for technical and agricultural education in reciprocal countries under United Nations supervision.

5. Our food and fiber grant program should be placed on a long-term basis rather than on the present month-to-month basis so that world economic and agricultural development can be planned and with some degree of security can be carried out.

The greatest thrill to me of the FAO Conference was to see sitting at the same table men from all the world—black, brown, yellow, white; some bearded and some turbaned, and some in western dress—working day after day toward one common goal—that of breaking through the hunger barrier with technological and scientific know-how.

I might go back to this Czechoslovakian thing again to mention you could not help but notice the fear that grips that country, at every level, even through the Deputy Minister of Food. He always had to admit in our discussion that when he asked the question he knew the answer, but he wanted to hear my slant of the answer. He did not dare say he didn't know. It was impossible for him to admit the lack of knowledge—and the shops, the shoddy merchandise that was available. And I think as an aside on this point, it was just before Christmas that I was there. There is one shop that features Western merchandise in Czechoslovakia. It can't be bought with Czech money. It has to be bought with what is called a coupon and these coupons can only be bought with hard currencies from the West. And the great gift I was able to give to some of my friends I had there was \$150 worth of coupons, and I had a letter yesterday which described their wonderful Christmas which was made possibly only because of these coupons.

The people will stand in long lines out on the street and maybe four or five will have four or five coupons between them. They will each take a coupon or two, because they can't even get in to look at the merchandise unless they have these coupons. A guard stands at the

door. They will go in and look and then come out and hand the coupon back to someone fortunate enough to own one or two coupons. So it was my impression that unfortunate country is still gripped by fear and no relaxation of tension and I think it is more probably true of Czechoslovakia, because it is an outpost of the West, the freest of the satellite countries, at least freest in knowledge because at one time they had known democracy. I think that is one reason why the system of fear has been developed so much greater there.

The immediate impression and one of the impressions that remains and stays with me and anyone who visits India and Pakistan is the fantastic poverty almost impossible to imagine; it is so great that one has to see it in order to believe it. The standard of living for most of the people is so low that a couple of chapatties—an item about the size of a pancake—which is a mixture of beans, grass, or wheat if they are lucky, a day is the diet for the vast majority of the people of these countries. On this diet these people are being called upon—without the benefit for the most part of any educational opportunity to develop a strong democratic country. This task, without generous assistance from the outside, is almost impossible. I could go into great detail about the thousands and thousands of wooden plows which I saw throughout the countryside—the generally archaic methods by which they are attempting to feed the ever-growing population—but in this short report I feel that time doesn't permit.

However, after visiting with the men who are in charge of the planning of their agricultural and industrial and scientific growth—and it was my good fortune to meet and talk with many of them, including Mr. Nehru—I must say that the leaders of these countries are showing remarkable courage in tackling this tremendously difficult problem.

In view of the U.S. position toward its friends throughout the world, I believe that this committee should take under serious consideration the development of effective legislation by which our undernourished friends in southeast Asia can make use of their and our resources and know-how in agricultural research and development by which to provide a better standard of living and a better climate in which democracy can grow and prosper.

People who are self-supporting and well fed generally do not fall victims to the snares of communism. This was brought out very well by Dr. Sen, who is leader of the Congress Party in West Bengal State. He said that “of the 47 Communists in their State legislature, all but 12 are elected from the refugee camp areas. If we could eliminate these jungles of poverty we would eliminate all but 12 of the Communist Party members in our legislature.” West Bengal has a population of about 35 million. It is an area smaller than my own State of Iowa.

He also told me in the area of Calcutta—and the whole city of Calcutta and the whole area surrounding it is probably the “black hole of Calcutta”—is the most unhappy city in the world. There are about 3½ million people without the benefit of any form of housing, 3½ million people in a metropolitan area of probably 9 or 10 million people. The only housing might be if they were lucky enough to have a blanket draped over a wall and held out from the wall 3 or 4 feet with a couple of stones. With no benefit of education, there

are 8-, 9-, and 10-year-olds running around the streets without a stitch of clothing. You can see children all alone in the streets without a stitch of clothing, bare naked, so that is undoubtedly one problem which is among the worst. So we are working vigorously on effective legislation to help to achieve the goals I have outlined as the No. 1 responsibility of our committee in the scientific, development, and research area. I hope to present them for the consideration of the committee in the very near future. I intend to bring these bills back to the committee for consideration before I introduce them for two purposes: (1) to gain agreement and receive suggestions and criticisms from the committee, and (2) to make sure that the bills are written in such a way that they will be referred by the Parliamentarian back to this committee. It is my feeling that in this way we will best insure that these bills will be referred back to our committee by the Parliamentarian.

I sincerely submit this is one area where our committee can achieve its full potential in aiding scientific development just as was so excellently stated by our good majority leader here this morning, that this is the area where we can work in. It does not deal with deep space. It deals with the heart and soul of mankind. I would also like to say that many people in this country feel that we cannot afford to put any efforts into these countries. And I believe that regardless of any attitude we may have on the humanitarian side that from the pure cold-blooded geopolitics standpoint we cannot afford not to. When I talked with Nehru he was preoccupied with the border crises going on with China exactly at that time. The Chinese were invading his border country, and it brings to mind—and we talked about it—the difference in the system.

In India he said we are trying to develop our economy and our country and our scientific and cultural attitudes through a peaceful method and in China just across the border they are trying to do it just the other way, through a system of fear and a breakdown of the family institutions.

This is perhaps not the consensus of opinion of all who visited there, but I honestly believe in 10 years if we have not made some very significant progress—and I say we, collectively, the free nations of the world—in India, that we will probably have lost the opportunity. The Chinese have the strength and the power, and given another 10 years, if somehow they have not been able to meet this crisis in India, I think they will have India and this will put in one camp about 1,200 million people in 10 years' time, in the Communist camp, and this is a kind of communism even more terrifying and fearful than that which exists in Russia today.

So I believe our committee has some jurisdiction and influence in these areas and I hope that our committee can draw some legislation through which we offer some solutions.

The CHAIRMAN. We thank you for your report.

Mr. McCormack?

Mr. McCORMACK. In your travels, Mr. Wolf, you went to sections of the world that other subcommittees did not go to, in a very important section of the world. I was very much impressed with your humanistic approach. That always appeals to me, because we are all human beings, no matter where we were born through the accidents

of birth. I am very happy to be born in America, but anyone born anywhere else is just another human being like myself with all the hopes and aspirations and disappointments and pains and joys that prevail, just like anyone else. But in your travels in Pakistan and India—but let me focus it on India—what did you find the feeling of the people you spoke to with reference to America was?

Mr. WOLF. This is a fine question, and I am glad you asked it because I almost forget one of the overall impressions I received.

As all people do when they go to India, they go in shops. The language of business in India is English so there is no problem to communicate on practically all levels of society, unless you perhaps get down to the most menial working people. There is no question, when you said you were an American, that brought smiles. They were happy to know that Americans were there. They are accepting quite a little aid from Russia but there is no feeling of warmth between the people of India and Russia that is automatically exuded. I think probably our stock was raised at that point because of the immediate crises of the border.

This is related to communism. The Communists in India are now building a backfire in which they are dissociating themselves publicly from the Chinese thing and any influence that might come up here, so it was already beginning to soften this attitude toward the Communists in the country. There is no question but people were happy to know us.

One night I was doing a little shopping for silks and things of that kind to take home to my relatives and friends and I got there just before the shop closed and they were quite adamant that the shop was closing. I said I am very sorry, because I am leaving Bombay tonight and I want to be able to buy these things. The ladies that visited with me said, "Where are you from?" I said I am from the United States. And they locked the shop, but with me on the inside, and 17 persons sat around while we did our purchasing for an hour and a half. We did not purchase all this time but for 20 minutes, and then they gathered around at tables in the middle of the shop and asked questions. It was out of these questions that went on relating to life in America and India and so on, one of the things I noticed from then on more sharply than I had before was they had great admiration for America but inevitably when you began to talk with the people there would be the question of the space program. I noticed there the almost humorous attitude, as one fellow says, to feeble attempts in space. The Russians have done a fantastic job in propaganda.

In Tokyo—and I have not reported on that because I am going to report on that later—but at a nightclub where they had dinner and entertainment while you wait, the master of ceremonies made humorous comments about our space program.

Mr. McCORMACK. But confining it to India, you found a warmth toward America and Americans as such.

Mr. WOLF. Yes.

Mr. McCORMACK. I thought the President's visit abroad has been remarkable in that respect. I think we view that not as Democrats and Republicans, but as Americans. I thoroughly approved of his visit abroad and conveyed that to him. I know he feels the same way—I know that: That he feels the great reception he got was a mani-

festation of friendship and warmth toward America, and that was contradicting some of the columns we read about here in America. But they are caught in the wedge. They have this great warmth for America, but as I understand it, they have this great economic problem and they are looking to us for hope. That is my impression.

Mr. WOLF. With every leader that I talked to, regardless of whether it was Mr. Gosh or Mr. Pattil or Mr. Nehru, I always have this feeling of hope and their expression of gratitude for what we have done. This was true in Pakistan and India both.

Mr. McCORMACK. I am not talking about official life but down in the people.

Mr. WOLF. That is right. It is in the press. I have articles in the English language newspapers expressing feelings of gratitude. I might say I was there 2 weeks ahead of the President in India and the reaction, the anticipation of his coming I think was very great, the promise of things that would happen as a result of it.

I visited the grounds of the World Fair and here is something that is I think of interest to the committee: The nuclear reactor that we had right in our agricultural exhibit in the Agricultural World Fair in New Delhi, where they were inviting the farmers from all over India to send seed to be impregnated and sent out and are hopeful mutations will come from it. In some of our experimentations in this country, in rice, for example, they have produced a mutation of rice which will produce a third greater yield. This is the sort of thing they hope will come out there, as well as demonstrations of America's scientific desires toward the Indian people. This World Fair is going to produce tremendous knowledge of the way American agriculture operates. I think it is going to ask some questions too. It is going to force us more or less to come through with more direct help, educationwise, for Indian agriculture, as a result of what they have seen in our agriculture.

The CHAIRMAN. Thank you again, Mr. Wolf.

The committee will go into executive session this morning—

Mr. KING. Mr. Chairman.

The CHAIRMAN. Mr. King.

Mr. KING. I wonder if I would be out of order to ask one other brief report be made by Mr. Fulton.

The CHAIRMAN. On the United Nations?

Mr. KING. Yes.

The CHAIRMAN. Mr. Fulton and Mr. Anfuso are our representatives to the United Nations. Mr. Anfuso is serving for me, and Mr. Fulton for Mr. Martin. I thought it would be better to have that in executive session. I anticipate it will take a little longer for that report. If I can, therefore, there is some other business that is rather urgent that will not take very long and I would like to get that over with first.

Mr. WOLF. May I ask an academic question, Mr. Chairman?

The CHAIRMAN. Yes.

Mr. WOLF. I would not like this to be a formal report.

The CHAIRMAN. No. You get up your formal report and embellish it with proper language and ornateness and give it the importance it is entitled to.

(Whereupon, at 11:30 a.m., the committee went into executive session.)

**MISCELLANEOUS COMMITTEE BUSINESS, REPORTS,
AND HOUSE JOINT RESOLUTION 460**

THURSDAY, MARCH 31, 1960

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

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

HOUSE JOINT RESOLUTION 460

The CHAIRMAN. The committee will come to order.

This morning, prior to our regular program, I want to take up the question of House Joint Resolution 460. It is a resolution introduced by Congressman Bob Jones of Alabama.

(The bill referred to is as follows:)

[H.J. Res. 460, 86th Cong., 1st sess.]

JOINT RESOLUTION To provide for the erection of a marker at Cape Canaveral, Florida, to memorialize the launching of Explorer I, the free world's first earth satellite

Resolved by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of Defense shall provide for the erection of a suitable marker at Cape Canaveral, Florida, to memorialize the launching by the Department of the Army, at such place of the free world's first earth satellite. Such marker shall bear an inscription substantially as follows: From this site, at 10:48 o'clock postmeridian, eastern standard time, January 31, 1958, Explorer I, a scientific earth satellite was placed in orbit by the United States Army. The successful launching of Explorer I was a significant contribution by this Nation to the International Geophysical Year.

The CHAIRMAN. House Joint Resolution 460 proposes the erection of a suitable marker at Cape Canaveral, Fla., to memorialize the launching of Explorer I.

We have Lt. Col. D. E. Simon—down in Louisiana it would be “See-mone”—to testify in support of this resolution. [Laughter.]

I understand it will take just a moment, Colonel Simon.

Do you have a prepared statement in reference to this resolution?

Colonel SIMON. Yes, sir, I have.

**STATEMENT BY LT. COL. D. E. SIMON, OFFICE OF THE CHIEF OF
RESEARCH AND DEVELOPMENT, DEPARTMENT OF THE ARMY**

Mr. Chairman and members of this committee, I am Lt. Col. D. E. Simon of the Office of the Chief of Research and Development, Department of the Army. I shall present the views of the Department of the Army acting on behalf of the Department of Defense on House Joint Resolution 460.

This resolution directs the Secretary of Defense to provide for the erection of a suitable marker at Cape Canaveral, Fla., to memorialize the launching by the Department of the Army of the first earth satellite of the United States of America.

The Department of the Army on behalf of the Department of Defense favors adoption of the resolution. However, it is considered that the phrase, "free world's first earth satellite" in the title, and in line 6, page 1, of the joint resolution unnecessarily emphasizes the fact that Explorer I was not the whole world's first earth satellite. It is recommended that the phrase, "first earth satellite of the United States of America" be substituted therefor, in each place.

I wish to thank you, Mr. Chairman and gentlemen, for giving me the opportunity to present this statement to the committee. I shall be glad to answer any questions which you may have.

The CHAIRMAN. That is fine. So the Army approves of this resolution with that suggested change?

Colonel SIMON. Yes, sir.

The CHAIRMAN. Let me ask you this, Colonel: What type of marker would the Defense Department erect down there? What would it cost?

Colonel SIMON. I have very little experience with this type of thing, sir. However, following a call from Mr. Hammill of the committee staff last night, I made contact with the American Battle Monuments Commission, and asked their advice on designs and cost figures on this sort of thing. If, by this type of monument, Congress wants something that would be visible from a few hundred yards away in country that may have features such as rolling sand dunes, and if the site requires some preparation, such as a little landscaping, the people I called at the Battle Monuments Commission told me that approximately \$50,000 would be required to do this job in an appropriate manner.

The CHAIRMAN. What is the recommendation? What does the Battle Monuments Commission recommend?

Colonel SIMON. Well, sir, this short conversation that I recently had with them was my only contact with them. I think it would be appropriate for the committee to contact these experts and get their advice on this matter. The cost is greatly determined by the amount of decoration among other things.

The CHAIRMAN. I thought the resolution was ready to dispose of, but it isn't. What would you say to the idea that we ask the Army to go back and check with the Battle Monuments Commission; ask them to send up to the Commission a suggestion as to the type of installation or placement they consider appropriate, and get an estimate of the cost of it. We can't submit a resolution like this. Even though it seems to be very simple, we can't submit it to the Congress without knowing just what we are going to do and just about what the cost would be.

What would you think of that idea?

Colonel SIMON. I think it would be very appropriate, sir. I would be happy to do that.

The CHAIRMAN. Fine. How long would it take to do that? Would a couple of weeks be long enough?

Colonel SIMON Yes; I should think it would be handled satisfactorily in that amount of time.

The CHAIRMAN. Mr. Fulton, you were just a moment late coming in.

Mr. FULTON. I understand the resolution.

The CHAIRMAN. You are familiar with it?

Mr. FULTON. Yes.

The CHAIRMAN. You heard my remarks. Are there any questions you wish to ask?

Mr. FULTON. No questions.

The CHAIRMAN. Any observations?

Mr. FULTON. I think the resolution should be passed. We should all feel that there is an important historicity to these matters. The skymarks, as well as the landmarks, should be noted.

The CHAIRMAN. Don't you agree that we ought to be able to explain to the Congress what type of marker it will be and what would be its cost?

Mr. FULTON. I would certainly agree with the chairman that there should be some more definite program laid on, and likewise some estimate of cost. I would put a minimum and a maximum cost on it, too.

The CHAIRMAN. The colonel suggests \$50,000. Well, because I talked to Congressman Jones, I happen to know that his idea was for something which would cost much less than that. I think we ought to erect a suitable marker if we are going to do it at all.

Mr. FULTON. I would say something much less expensive and, in the order of just a bronze marker, a tablet, is enough. Not another Iwo Jima stand.

The CHAIRMAN. Congressman Jones wasn't able to come this morning, but he sent a statement over here, and if there is no objection we will have it set forth in the record. It is so ordered.

(The statement referred to is as follows:)

STATEMENT OF HON. ROBERT E. JONES OF ALABAMA BEFORE THE HOUSE SCIENCE AND ASTRONAUTICS COMMITTEE IN SUPPORT OF HOUSE JOINT RESOLUTION 460, MARCH 31, 1960

Mr. Chairman, the morale of the American people was very low in January 1958. For generations many of us had the complacent belief that we led the world in science, technology, and military preparedness.

This proud belief was shaken, if not shattered for many, when Soviet Russia put up its first earth satellite before our own. The extravagant boasting and propoganda from Moscow after this feat did a lot to depress American prestige around the world and national pride at home.

The entire free world looked toward the United States and in a figurative way asked us: "What are you going to do about it?"

The answer came on January 31, 1959. We launched Explorer I from Cape Canaveral, Fla., and it went into orbit around the earth. Our first space vehicle was sent into orbit by equipment developed at Huntsville, Ala., in the Redstone Arsenal, now renamed the George C. Marshall Space Center. This space center is located in my congressional district in Alabama.

With the launching of Explorer I, more than our first space satellite went up from the Florida cape. It took with it a restored national pride in our own capabilities and a renewed world prestige for American enterprise and talents. The effects of this launching still are being felt in many fields of our national life. It was a triumph that must not be forgotten by the American people. I do not believe that they want it to be forgotten.

My resolution, House Joint Resolution 460, asks that the Defense Department be authorized to erect a marker at Cape Canaveral to memorialize this historic event.

This memorial will be a tangible reminder of a spectacular triumph of American science and a deserved and proper tribute to the dedicated military and civilian personnel who made it possible.

The design of this memorial should be left to the discretion of the Defense Department, the cost to be determined by Congress after the presentation of suitable designs and cost estimates to this committee of the Defense Department. A suitable marker in bronze on stone can be designed by the Defense Department, and the size of it should be in accordance with the surroundings at this historical site.

I appreciate this opportunity to submit my views to your committee, and I am hopeful that you will favorably report House Joint Resolution 460 within the near future, so that we may obtain its passage at this session of Congress.

The CHAIRMAN. Colonel, we thank you very much, and when you are ready will you let our staff know, so we can call on you, then, for a final report?

Colonel SIMON. Yes, sir.

The CHAIRMAN. Until then, we won't take any action.

Colonel SIMON. Thank you very much.

(Whereupon, at 10:15 a.m., the committee proceeded to other business.)

**MISCELLANEOUS COMMITTEE BUSINESS, REPORTS
AND HOUSE JOINT RESOLUTION 460**

FRIDAY, JANUARY 22, 1960

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

APPROVAL OF STAFF REPORT, "PROJECT MERCURY"

The CHAIRMAN. At this time, I think we should take up the Project Mercury report. It is a most excellent report prepared by Lieutenant Colonel Dillon. He has worked for a number of months on this report and it is an excellent report, in all respects. It is cleared by the Departments, and we know there is nothing in here which should not be published as classified.

At this time, it would give these people something they might send over to use with the peoples of the world. It has not yet been released and it is not releasable at this time, but everybody has it. If there is no objection and no comment, we will approve it as a committee report.

Mr. HECHLER. Could we do that Monday? I haven't had a chance to examine it.

The CHAIRMAN. It is a very fine report and there is really no objection. Everyone who has read it, has agreed it is all right.

Mr. HECHLER. If nobody else objects, I won't object, but I have only had 12 hours.

The CHAIRMAN. I have had it a week.

Mr. ALLEN. I may say, Mr. Chairman, that my agency has already sent abroad to all of our posts, two of the documents of this committee which we found so useful to our activities that we circulated them to all of our posts and the one that you refer to now, which I don't believe I have——

The CHAIRMAN. You are not supposed to have it.

Mr. ALLEN. I thought maybe I was going to get an advance copy of it.

The CHAIRMAN. There is no objection to it and it will have this advantage: It is already a staff report, but the advantage of approving it by the committee is that we can get printed copies and that is about the sole advantage.

If there is no objection, we will approve it.

(Project Mercury Report by Lieutenant Colonel Dillon was approved as a committee report.)

The CHAIRMAN. Do we have further questions, now? Perhaps my last question opened up new avenues of thought. Are there any fur-

ther questions? You have a man here today who can answer the questions and we may not have him back soon.

In line with this staff report—as I say, it is a very excellent report—we are going to try to get out more staff reports, reports that won't require the active efforts of the committee, itself. We think that we can cover certain areas very successfully with the staff reports. Now, they are going to be submitted to the committee, but they don't necessarily have to be committee reports.

I just thought I would mention that for the future. I have talked to a number of members and they think it is a good policy.

Mr. RIEHLMAN. I concur in your feeling toward getting out as many reports as we possibly can and effective ones, but really, I hesitated to object today on approving a report which I, myself, haven't had a chance to look at. It is on my desk and I know it and I intended to do it over the weekend. I only say this to you in all fairness of the committee that I shall not go along with approving them if we only have them for a day or two to read.

The CHAIRMAN. We are not going to submit the report for committee approval—most of the staff reports won't even come to the committee for approval, but they will be submitted to the committee and if there is objection, of course, they won't be released as a staff report.

Mr. RIEHLMAN. I don't accept that policy either, Mr. Chairman, that the staff be permitted to issue reports without the committee having an opportunity to act upon them.

The CHAIRMAN. If there is objection to the policy, we will suspend it and take it up later in executive session. I think that that is all that I had in mind there.

(Whereupon, at 12 noon, the committee adjourned to reconvene Monday, January 25, 1960 on another subject.)