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UNITED STATES ATOMIC ENERGY COMMISSION

VOLUME XVII

In the Matter Of:

J. ROBERT OPPENHEIMER

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UNITED STATES ATOMIC ENERGY COMMISSION
PERSONNEL SECURITY BOARD

In the Matter of :

J. ROBERT OPPENHEIMER :

Room 2022,
Atomic Energy Commission,
Building T-3,
Washington, D. C.
Tuesday, May 4, 1954.

The above entitled matter came on for hearing,
pursuant to recess, before the Board, at 9:30 a.m.

PERSONNEL SECURITY BOARD:

- MR. GORDON GRAY, Chairman.
- DR. WARD T. EVANS, Member.
- MR. THOMAS A. MORGAN, Member.

PRESENT:

ROGER ROBB, and
C. A. ROLANDER, JR., Counsel for the Board.

J. ROBERT OPPENHEIMER.
LLOYD K. GARRISON,
SAMUEL J. SILVERMAN, and
ALLAN B. ECKER, Counsel for J. Robert Oppenheimer.
HERBERT S. MARKS, Co-counsel for J. Robert Oppenheimer

I N D E X

<u>Witness</u>	<u>Direct</u>	<u>Cross</u>	<u>Redirect</u>	<u>Recross</u>
VANNEVAR BUSH	3048	3054		
KATHERINE PUENING OPPENHEIMER	3067	(Examination by the Board)		
JERROLD R. ZACHARIAS	3091	3106	3123 3126	3124
ALBERT GORDON HILL	3135	3152	3164	

P R O C E E D I N G S

MR. GRAY: The proceeding will begin.

MR. ROBB: Mr. Rolander has a brief statement about a matter, Mr. Chairman.

MR. ROLANDER: During the course of this hearing it has been stated that the transcript of this hearing is being reviewed for declassification purposes by the AEC and other agencies. For the purpose of clarification of the record, in regard to AEC declassification of the transcript of this hearing, it should be stated that the AEC is taking full responsibility for such declassification. When classified information inadvertently enters the record, and when such information is of primary concern to other government agencies and when the AEC feels that advice is necessary to a proper decision, we are asking the advice of the interested agency as to whether such information should be deleted.

Representatives of these other agencies review only those portions of the record in which the AEC thinks they may have a prime interest. These reviews are being made in the AEC offices, and in the presence of an AEC declassification expert.

MR. GARRISON: Does Mr. Rolander know when the remaining volumes will be made available to us to take from the building?

MR. ROLANDER: I understand that they are working

on it, Mr. Garrison. I will have to check with the classification official. Perhaps I can do that at recess.

MR. GRAY: Will you proceed, Mr. Garrison.

Whereupon,

VANNEVAR BUSH

a witness having been previously duly sworn, was called in rebuttal, examined and testified as follows:

MR. GRAY: It is my duty to remind the witness that he continues to be under oath.

THE WITNESS: Quite right, sir.

DIRECT EXAMINATION

BY MR. GARRISON:

Q Dr. Bush, I want to read you from the testimony of Dr. Luis Alvarez before this Board a short passage which mentions yourself, and I want to ask you to comment on it. I am reading from the direct testimony at page 2697, and it may run over to 2698. Perhaps the shortest way is to read it to you as it actually is. Recalling a conversation with you, he says:

"I can give you some information that will --

A I think I ought to have the time of that and the circumstances.

Q He says it was perhaps a couple of months after Dr. Alvarez's return from Washington in October, 1949. Then he goes on to talk about the date a little more precisely.

MR. ROBB: That is what I said, Mr. Garrison.

MR. GARRISON: Mr. Robb said that. Then he goes on to give his own fixation of the date. I think it will become clear when I read this to you.

BY MR. GARRISON:

Dr. Alvarez says: "I can give you some information that will place this conversation within a day, because Dr. Bush was in California to inspect one of the Carnegie Institution facilities at Stanford University. As you know, Dr. Bush is Director of the Institution. I remember that when I arrived home after our conversation with Dr. Bush, I found in the mailbox a copy of Life Magazine which had a condensation of the book 'Modern Arms and Free Men'. So that places the date within a day."

If I can pause a moment, that date would be approximately when, Dr. Bush, do you recall?

A I suppose that is along in October 1949.

Q I don't think it is of any particular moment here.

A I think that is the date of that article.

Q Going on quoting: "What Dr. Bush said to Professor Lawrence and me was that he had been appointed by the President to head an ad hoc committee to assess the evidence for the Russian explosion. The Atomic Energy Commission and the armed forces, particularly the Air Force, had collected a good deal of information, all of which tended to indicate that

the Russians had exploded a bomb, but before announcing that to the public the President wanted to make sure that the evidence was conclusive. If I remember Dr. Bush correctly, he said that he was made chairman of that. If I can paraphrase Dr. Bush's statements and give them in the first person, they went something like this. He said, "You know, it is a funny thing that I should be made head of such a committee, because I really don't know the technical facts in this field. I am not an atomic physicist, and I am not the one to assess these matters." But, he said, "I think the reason the President chose me is that he does not trust Dr. Oppenheimer and he wants to have someone in whom he has trust as head of this committee."

I will stop at that point, because I want to ask you about that. I should say on cross examination -- I will read the passage at pages 2731 or 2730, I guess it begins. This is the question put to Dr. Alvarez:

"Did I understand you said that Dr. Bush said that the reason he was Chairman, the reason the President had named him as Chairman, was that the President didn't trust Dr. Oppenheimer?"

"A. That is the reason he said he thought he had been made Chairman. I rather doubt that the President told him that he didn't trust Dr. Oppenheimer. I think this was Dr. Bush's construction."

"Q. Have you heard since that panel was not named by the President, but by the Air Force?

"A. I have never heard a single word of this panel, sir. As I said, I refreshed my memory on the long range objective panel. I re-read the report. I have never checked at all anything to do with this. As a matter of fact, I had forgotten this thing until recently. I did not mention it to the gentlemen who questioned me in Berkeley some months ago."

I think that is all I need to read, unless Mr. Robb or the Chairman thinks there is more.

MR. ROBB: No.

BY MR. GARRISON:

Q Dr. Bush, who appointed you to the Chairmanship of the committee that is hereunder discussion?

A General Vandenberg.

Q And not the President?

A No. I had no contact with the President in connection with that matter, either before or after the panel's action.

Q Did President Truman ever indicate to you any distrust of Dr. Oppenheimer?

A He did not.

Q Any doubt about him of any sort?

A Not at any time.

Q Did you ever gather from anyone else that President

Truman had any doubt about Dr. Oppenheimer?

A No.

Q Do you recall having made any statement of this general kind to Dr. Alvarez?

A I don't remember that conversation in detail, of course. I go to the coast about twice a year, once or twice a year, to visit Carnegie installations. I suppose three times out of four I see Dr. Lawrence. He is one of my trustees, and I have been a friend of his for many years. Occasionally I see others, including Alvarez, from his group. I don't remember in detail that particular conversation. I am quite sure I didn't say to him that the President had doubts about Dr. Oppenheimer simply because it was not true.

Q Did anybody in the Air Force at the time of your appointment say that you were being made Chairman because of doubts about Dr. Oppenheimer's loyalty?

A No, they did not. The only thing that occurred there--- I think it was General Nelson who visited me in this connection -- when he told me of the makeup of the committee, I remember saying to him, "But wouldn't it be more reasonable for Dr. Oppenheimer to be Chairman, since he is Chairman of the General Advisory Committee," and he said to me something to the effect that they would prefer it the way it was. That is all there was.

Q Going back now to Dr. Alvarez's direct testimony

at page 2697 or 2698:

"Dr. Bush then said that the meetings of the committee were very interesting. In fact, he found them humorous in one respect, because he said, 'I was ostensibly the chairman of the committee. I called it to order, and as soon as it was called to order, Dr. Oppenheimer took charge as chairman and did most of the questioning,' and I believe Dr. Bush said that Dr. Oppenheimer wrote the report. This was the first time I had ever heard anyone in my life say that Dr. Oppenheimer was not to be trusted."

That is referring back to the alleged statement of President Truman.

Do you recall saying anything of the sort that I have just quoted to you?

A On the contrary, I am sure I did not make that statement for the same reason as before; the statement is not true.

Q In what sense is it not true?

A No part of it is true. The procedure of that panel was one exactly of what one would expect of a panel of that sort. I acted as chairman. I have acted as chairman of a great many meetings. I can't recall any instance where any member of the committee has taken over my functions as chairman while I was chairman. Certainly nothing of the sort occurred at that time. We all questioned witnesses. I think that

probably Dr. Bacher, Admiral Parsons and Dr. Oppenheimer did more questioning than I did, because there is just one thing that is correct in there, and that is, namely, that I am not a nuclear physicist. Hence they conducted most of the detailed questioning. But I acted as chairman.

When we came to the report, we wrote that report around the table. It was a very brief report. I remember writing a paragraph of it myself. I don't remember who contributed what parts of it today. It was the sort of job that a committee of four would do around the table. Dr. Oppenheimer contributed throughout in a normal and perfectly proper manner.

MR. GARRISON: That is all, Mr. Chairman.

CROSS EXAMINATION

BY MR. ROBB:

Q Dr. Bush, did you ever discuss Dr. Oppenheimer with General Vandenberg?

A No, sir.

Q It did strike you as unusual that you were chairman of that committee, instead of Dr. Oppenheimer?

A Merely because I had no official connection at that time with the United States Government. He was Chairman of the General Advisory Committee of the Atomic Energy Commission, and it seemed to me that it would have been more normal for him to have been the chairman of this panel reviewing the evidence.

Hence I raised the question. I think it was General Nelson of the Air Force that was talking to me -- I can't be sure I have the right General -- when he said that the Air Force would prefer the panel the way it stood, we went no further.

Q Did you ask him why?

A No.

Q Do you recall the occasion when you and Dr. Alvarez and Dr. Lawrence were driving in a car after inspecting one of your places?

A I don't remember in detail. There have been dozens of such occasions and I can't separate that out and recall it in any detail.

Q You would not question that Dr. Alvarez was correct about that?

A No, I wouldn't question that he was correct, that he picked me up at Palo Alto and we drove somewhere. Whether it was a hotel -- I think you said something about a hotel -- I don't remember going to a hotel. But several times -- well, quite frequently -- Dr. Lawrence would join me at Palo Alto and we would drive over to his laboratory at Berkeley.

Q And your suggestion is that nothing like that at all happened, and there was no reason for Dr. Alvarez to even have that impression of his conversation with you, is that right?

A I made it very clear the parts of that statement

which I say did not occur. There are two parts and I say those did not occur because neither of them was true. I don't make false statements. Hence I know I didn't make that one.

Q What I am getting at is do you think you said anything from which Dr. Alvarez might have gotten that impression?

A No, I certainly do not remember anything of the sort.

Q You made no remark which was in your opinion susceptible of any such construction?

A I am sure that I made no remark that would reflect upon Dr. Oppenheimer's loyalty or integrity or judgment in which I have had great confidence for many years.

Q Did you make any remark, Dr. Bush, which in your opinion was susceptible of the construction which Dr. Alvarez placed upon it in his testimony?

A I have no recollection of any remark from which he could get any such impressions.

Q Would you say you didn't make any such remark?

A I say I don't remember the conversation in detail.

Q I see. If I might, Dr. Bush, clear up something in the record having to do with your testimony when you came here before. Do you recall you were rather critical of the letter written to Dr. Oppenheimer by Mr. Nichols?

A Quite right.

Q And in particular you were critical of the paragraphing?

A No, sir. I don't remember I was critical of the paragraphing. I was critical of one particular statement in there because I said that it could be interpreted readily by the public, and in my opinion was being thus interpreted, as putting a man on trial for his opinions.

Q Don't you remember that you made some particular reference to the paragraphing?

A I don't remember. Can you give it to me?

Q I will read it to you at page 1984. This was in answer to a question by Mr. Morgan:

"Doctor, on what ground would you ask for a bill of particulars if you didn't know the record?"

And you answered:

"I think that bill of particulars was obviously poorly drawn on the face of it, because it was most certainly open to the interpretation that this man is being tried because he expressed strong opinions."

A Right.

Q "The fact that he expressed strong opinions stands in a single paragraph by itself. It is not directly connected. It does not have in that paragraph, through improper motivations he expressed these opinions. It merely says he stated opinions, and I think that is defective drafting and should have been corrected."

Do you recall that?

A Yes, I remember that.

C You had read that particular paragraph in the New York Times, I take it?

A Yes, I believe I said so.

Q Yes, I think you did. I want to show you the New York Times for Tuesday, April 13, 1954, page 16, carrying the text of the letter to Dr. Oppenheimer, and ask you if you will show us the paragraph you were talking about. I think you will find it here some place.

A Yes, sure; this is it through here.

Q Which is the one paragraph you had in mind?

A This is the paragraph I referred to, I think, isn't it?

Q I don't know, Doctor.

A Yes.

Q Would you read us the paragraph you had in mind?

A Let me be sure I have the right one. "It was further reported"-- no, wait a minute. Yes. "It was reported that in 1945 you expressed the view that there was a reasonable possibility--" wait a minute. This is the one. "It was further reported that in the autumn of 1949 and subsequently you strongly opposed the development of the hydrogen bomb on moral grounds, by claiming that it was not feasible, by claiming that there were insufficient facilities and scientific personnel to carry on the development, and four, that it was not politically desirable."

Q That is the paragraph you had in mind?

A That is the one I referred to.

Q And you felt that putting that sentence in a separate paragraph was improper and damaging, is that correct?

A The fact that it was in a separate paragraph was secondary. I feel that statement as a whole is fully open to the interpretation that a man is being tried for his opinions. That any reasonable man, particularly not a man with legal training, reading that entire statement, would feel that this man is being tried because he had strong opinions and expressed them, which I think is an entirely un-American procedure.

Q But the fact of the matter is, Doctor, that you felt that the paragraphing was of sufficient importance that you made a point of it.

A I think the paragraphing as I read it emphasized the point, but is not necessary to the point that I am making, which is that the statement as a whole, the letter as a whole, was open to that interpretation.

Q I am directing your attention to your testimony about the paragraph and you concede, Doctor, you gave that testimony, didn't you?

A I gave the testimony and I referred to that particular paragraph.

Q And you were not giving testimony before this Board about a matter which you thought was trivial?

A I was giving testimony about a very important matter, indeed.

Q Yes, sir. Now, Doctor, you took that paragraphing from the New York Times, didn't you?

A So I said.

Q Yes, sir. Now, I am going to show you the letter, the actual text of the letter sent to Dr. Oppenheimer, and ask you if you don't see from that that that paragraph which you read was not a separate paragraph in the letter at all, but was part of a much longer paragraph beginning, "It was reported that in 1945 you expressed the view that there was a reasonable possibility" and so forth, and ending "of which you are the most experienced, most powerful and most effective member, had definitely slowed down its development."

In other words, Doctor --

A But the wording is the same --

Q May I finish my question, and then you can finish your answer.

In other words, Doctor, the New York Times in its story broke up the paragraph of General Nichols' letter, into four paragraphs.

A Without changing the wording.

Q That is right.

A I don't need to read that, if you tell me that.

(Document handed to witness.)

THE WITNESS: This is a separate paragraph (indicating).

BY MR. ROBB:

Q Where?

A Here (indicating).

Q It starts up here, "It was reported in 1945".

A Oh, yes. Right.

Q So you agree, Doctor, that the Times no doubt for greater clarity to its readers or for reasons of newspaper technique broke the paragraph in the Nichols letter into four separate paragraphs.

A I would have expressed exactly the same opinion had I read the thing you later showed to me, namely, that is fully open to the interpretation that a man is being tried for his opinions.

Q But if you read the original letter, you would not have made your point about the separate paragraphs.

A No.

Q Because it was not based on fact, was it?

A It was based on what facts I cited.

Q Yes, sir. Wouldn't you conclude from that, Doctor, that before making such statements it is well to know all the facts?

A Yes, I think you sitting here, if you find me operating on a basis of a published statement, which is not exact, should have called it to my attention at that time.

Q That is exactly what I am doing now, Doctor. It was not until after you testified that I realized you had been in error. Thank you.

MR. GRAY: Dr. Bush, I think I should say to you that this Board was confused about some of your testimony, especially on this particular point. I think that no member of the Board was aware that this paragraphing change had been made at the time you were here, so this is not an unimportant matter because we have had another distinguished witness before this Board, a man of international distinction, who in milder terms, but in somewhat the same spirit, was critical of the General Manager's letter. I don't think he went as far as you did in saying that the Board should have refused to serve at the call of the country until --

THE WITNESS: Mr. Chairman, may I interrupt? I don't think I said that.

MR. GRAY: You have interrupted me.

THE WITNESS: Excuse me, sir.

MR. GRAY: You said until the letter had been rewritten.

THE WITNESS: Excuse me.

MR. GRAY: I was in the middle of that sentence.

THE WITNESS: Excuse me.

MR. GRAY: But the other witness to whom I refer made a particular point about the construction of the letter. There was no uncertainty in his views whatsoever, and the

thing that concerns me, also, about all of this is public misapprehension of which I am sure there is a great deal. So that if witnesses before this Board have testified in such strong terms about the construction of this letter, before the Board, they no doubt are testifying in equally strong terms among their associates, perhaps in the scientific community. This is another case of misapprehension or misunderstanding.

I want to make it clear that this discussion which I am conducting with you is for the purpose of emphasizing the seriousness of some of these misapprehensions, and not in defense of or attack upon the letter which was written by the General Manager with which this Board was not concerned.

I would like to ask you another question which relates now to the Alvarez testimony.

THE WITNESS: I think I might clarify a point if you will let me.

MR. GRAY: You certainly may.

THE WITNESS: I have not discussed the procedure of this Board with anyone, of course, while it is going on -- scientists or otherwise. I have not given any statement to the press. I have talked over that particular matter which I raised here and which I think is so important with several men, not scientists, as it happens -- there was one scientist among them -- but men that I have great confidence in, in

order to attempt to clarify my own thinking. One of those was a Justice of the Supreme Court. One or two others were men whose names you would recognize.

I realize what an important thing it is that I am calling attention to there. I realize how serious a thing it is in this country if the public gets the impression that a man is being tried for his opinions. Hence, before appearing before you, I talked to a number of men for the purpose of clarifying my own thinking. But otherwise, I have not discussed this matter with scientists, and I certainly have not done so generally in public.

MR. GRAY: All right, sir.

MR. GARRISON: Mr. Chairman, would it be appropriate for me to make a statement about this Times paragraphing which I would like to do, but I don't want to interrupt the course of your questioning.

MR. ROBB: I was about to say that if Mr. Garrison was going to say that he was not responsible for the Times paragraphing, I think that is a fact.

MR. GARRISON: I would like to say this. It was brought to our attention for the first time yesterday, Mr. Chairman, that this passage in the Times had been broken up into four paragraphs. We checked with Mr. Reston, who verified the fact that the copy which we had given him was a Chinese copy, in the journalistic phrase, of General Nichols's letter,

that is, with every page the same and every paragraph the same identically as it appeared. He set it up to New York to be set up, and without any instructions from him or any knowledge on his part it was broken up into these paragraphs, presumably, he said, because it was so very long.

I should also say that this having come to my attention in this fashion, I showed it to Dr. Bush before the session began to ask him if he wanted to modify his testimony about the effect which the reading of the passage in question made upon him, and he told me he could not.

Needless to say, Mr. Chairman, I regret very much indeed that the matter was broken up in the manner described.

MR. GRAY: I think the Board understands that the newspaper reconstruction of this thing is frequently done in the press.

Dr. Bush, I would like to go back to the Alvarez testimony about which there was some discussion.

THE WITNESS: Yes, sir.

MR. GRAY: Let me ask this question: If you substitute the name General Vandenberg for President Truman -- this is a hypothetical type of question -- suppose Dr. Alvarez's testimony had been to the effect that General Vandenberg appointed this committee -- I am substituting Vandenberg for Truman -- and that your guess was that General Vandenberg appointed you chairman rather than Dr. Oppenheimer

because he, Vandenberg, probably did not trust Dr. Oppenheimer, assume for the purpose of the question that Alvarez's testimony had been to that effect, is it possible, then, that a conversation with him might have left with him the impression that he testified to?

A That certainly also was not true, sir, so I know I did not make any such statement to him.

Q This means, then, I take it, that you have no question in your mind about General Vandenberg's attitude?

A I have no question in my mind. There was no statement to the contrary. He appointed Oppenheimer as a member of this panel. There was no point at any time questioning Oppenheimer's qualifications or his loyalty or anything else.

MR. GRAY: I think you are very clear on that in your recollection.

Are there any more questions?

MR. ROBB: Nothing further.

MR. GRAY: Thank you, Doctor.

(Witness excused.)

MR. GARRISON: May we have a couple of minutes, Mr. Chairman?

MR. GRAY: Yes,

(Short recess.)

Whereupon,

KATHERINE PUENING OPPENHEIMER

a witness having been previously duly sworn, was recalled to the stand and testified further as follows:

MR. GRAY: Mrs. Oppenheimer, it is my duty to remind you that you are still under oath in this proceeding.

THE WITNESS: Right.

EXAMINATION

BY MR. GRAY:

Q We have asked you to come before the Board again for some further questions.

Do you remember a man named Jack Straus?

A I have heard him mentioned in the last few days. I could not have said that I remembered him, no.

Q So you don't recall then, getting into an argument or discussion with him at a meeting, or one of the meetings that Dr. Oppenheimer testified about.

Are you familiar with the fact that he testified that to the best of his recollection, Mr. Straus attended one or two meetings, was it, Mr. Robb, do you remember?

MR. ROBB: I think the meeting at Miss Bransten's house.

MR. SILVERMAN: There is also testimony of a meeting at Mr. Chevalier's house earlier.

MR. ROBB: One or the other.

MR. SILVERMAN: Perhaps both.

BY MR. GRAY:

Q In any event, Dr. Oppenheimer testified that he recalled Mr. Straus was there. You say you do not remember Mr. Straus at all?

A I don't remember Mr. Straus.

Q Were you personally acquainted with an individual named David Adelson?

A I think I have met him, but I am not sure.

Q You don't have any clear recollection?

A No, I don't.

Q Do you recall a man named John Steuben?

A Yes.

Q Who was he?

A He was the section organizer of the Communist Party when I was a member of the Party in Youngstown, Ohio.

Q And that was back in the Thirties sometime?

A 1945 -- 1934-35.

Q When you knew him in Youngstown, did you ever have any association with him following the years when you were in Youngstown?

A Yes.

Q Could you tell us about that?

A I saw him when I returned from Europe in 1937 to go back to school. I saw him in New York.

Q And didn't see him after 1937?

A I don't think so.

Q Did you ever have any telephone conversations with him after 1937 that you recall?

A No, not that I recall. I am quite sure I didn't.

Q Did you know a man named Paul Pinsky?

A As I recall he also comes up in this letter from General Nichols, and I think I may have met him, too.

Q Did you ever have any discussion with anybody about Dr. J. Robert Oppenheimer running for Congress from the Seventh District, or whatever the appropriate district is?

A No.

Q So you would not have received the suggestion from David Adelson and Paul Pinsky to this effect, or you don't recall?

A I am sorry it makes me giggle, but it does. I have never heard of such a thing.

Q Do you know someone named Barney Young?

A Barney?

Q B-a-r-n-e-y.

A No.

Q I want to refer now to the contributions that Dr. Oppenheimer was making through Isaac Folkoff and possibly others as late as some time in 1942. Were you familiar with the fact that these contributions were being made at the time?

A I knew that Robert from time to time gave money, yes.

Q Do you remember whether he gave money on any regular or periodic basis?

A Do you mean regular, or do you mean periodic?

Q I really mean regular.

A I think he did not.

Q Were you aware that this money was going into Communist Party channels?

A Through Communist Party channels?

Q Yes.

A Yes.

Q You had yourself broken with the Communist Party as early as 1937, I believe?

A 1936 I stopped having anything to do with the Communist Party.

Q Would it be fair to say that Dr. Oppenheimer's contributions in the hears as late as possibly 1942 meant that he had not stopped having anything to do with the Communist Party? I don't insist that you answer that yes or no. You can answer that any way you wish.

A I know that. Thank you. I don't think that the question is properly phrased.

Q Do you understand what I am trying to get at?

A Yes, I do.

Q Why don't you answer it that way?

A The reason I didn't like the phrase "stopped having anything to do with the Communist Party" because I don't think that Robert ever did --

DR. EVANS: What was that?

THE WITNESS: It is because I don't think Robert ever had anything to do with the Communist Party as such. I know he gave money for Spanish refugees, I know he gave it through the Communist Party.

BY MR. GRAY:

Q When he gave money to Isaac Folkoff, for example, this was not necessarily for Spanish refugees, was it?

A I think so.

Q As late as 1942?

A I don't think it was that late. I know that is some place in the record.

Q I may be in error. My recollection is that Dr. Oppenheimer testified that these contributions were as late as 1942. Am I wrong about that?

A Mr. Gray, Robert and I don't agree about everything. He sometimes remembers something different than the way I remember it.

Q What you are saying is that you don't recall that the contributions were as late as 1942?

A That is right.

Q Are you prepared to say here now that they were not

as late as 1942?

A I am prepared to say that I do not think that they were that late.

Q But you do think it is possible that they could have been?

A I think it is possible.

Q I mean, it is possible, if you don't have a very clear recollection --

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MR. SILVERMAN: Would it be helpful for me to state my recollection of the evidence on this point, or would you rather not, sir?

MR. GRAY: No, I would prefer to proceed. What I am trying to get at, Mrs. Oppenheimer, is at what point would you say Dr. Oppenheimer's associations or relationships with people in the Communist Party ceased?

THE WITNESS: I do not know, Mr. Gray. I know that we still have a friend of whom it has been said that he is a communist.

MR. ROBB: I beg your pardon?

THE WITNESS: I said I know we still have a friend of whom it has been said that he is a communist.

MR. GRAY: You refer to Dr. Chevalier?

THE WITNESS: Yes.

MR. GRAY: I really was not attempting to bring him into the discussion at this point. I believe the import of the testimony you gave the other day was that at one time you felt that the Communist Party in this country was of an indigenous character and was not controlled or directed by international Communism.

THE WITNESS: That is right.

MR. GRAY: I think also that you testified that knowing today what you do, you would think it would be a mistake to be indentified---

THE WITNESS: That is right.

MR. GRAY: Now, I am trying to get at the point of by what mechanics one who has been associated becomes clearly disassociated.

THE WITNESS: I think that varies from person to person, Mr. Gray. Some people do the bump, like that, and even write an article about it. Other people do it quite slowly. I left the Communist Party. I did not leave my past, the friendships, just like that. Some continued for awhile. I saw communists after I left the Communist Party. I think that I did not achieve complete clarity about it until quite a lot later.

MR. GRAY: About when would that be, do you suppose?

THE WITNESS: I find that very hard to say, but I have been thinking about it. I would roughly date a lot of it around Pearl Harbor.

MR. ROBB: Around what, Mrs. Oppenheimer?

THE WITNESS: Pearl Harbor. I mean as sort of an end point. There were other things that happened much earlier that made me feel that the Communist Party was being quite wrong.

MR. GRAY: Would you attempt to date Dr. Oppenheimer's conclusion to that effect.

THE WITNESS: Yes.

MR. GRAY: About when would that be?

THE WITNESS: I thought you said to that effect, meaning Pearl Harbor.

MR. GRAY: No. I meant by that the conclusion that the Communist Party was quite wrong. At what time would you guess that he came to the same conclusion with clarity?

THE WITNESS: I think earlier than I.

MR. GRAY: Earlier than you?

THE WITNESS: Yes.

MR. GRAY: Which would have been earlier than December, 1941?

THE WITNESS: Yes.

MR. GRAY: Mrs. Oppenheimer, a witness testified here as to an opinion he held, which was this: that he felt that you had decided that the most important thing in the world was your husband and his career. That is not an unreasonable assumption. And that he felt that you were determined to help him not make mistakes. Let me say that this is certainly not a verbatim recital of what he said, but I am sure it is the import.

If you had thought that Dr. Oppenheimer's contribution to Folkoff and others would adversely affect his career, would you have attempted to dissuade him from making such contributions?

THE WITNESS: If I thought that?

MR. GRAY: Yes.

THE WITNESS: Yes.

MR. GRAY: Did you ever discuss with him the necessity for avoiding associations with people who were identified with the Communist Party, to your knowledge, or whom you might have suspected that were identified with the Communist Party?

THE WITNESS: I do not remember thinking of anybody as being identified with the Communist Party in those days, except people whom I knew were out and out Communists.

MR. GRAY: Yes. And did you ever discuss with him the desirability of not continuing an association with those people?

THE WITNESS: I did not think of anybody as being a Communist Party member except certain party functionaries. We have to have that straight.

MR. GRAY: Let us hold it to the party functionaries. Let us mention the name Folkoff.

THE WITNESS: I did not think that Robert's contacts with Folkoff as an association.

MR. GRAY: You did not consider the contributions to Folkoff as an association?

THE WITNESS: No.

MR. GRAY: What would constitute an association in your judgment?

THE WITNESS: Let us take a man like William

Schneiderman, who is definitely a communist in San Francisco. I think if one were friends with him, that would be association with the communists.

MR. GRAY: If one gave money to him, would that be an association?

THE WITNESS: It would depend for what reason one gave him some money.

MR. GRAY: If one knew that the money was going into Communist Party channels, would it make any difference for what reason the Party membership said the money was going to be used?

THE WITNESS: I think so.

MR. GRAY: You do?

THE WITNESS: I do not think so now, but I did then.

MR. GRAY: Today you would say you would not think so?

THE WITNESS: Indeed not.

MR. GRAY: And you think then that the conclusion you hold now was one that if you had to date it might have come around Pearl Harbor?

THE WITNESS: Or later.

Mr. Gray let me make quite clear that my progress of thought has not been a clear chain about these things. I have been quite fuzzy about a lot of things. I have always to differentiate between what I thought at a certain time and

what I think now. It is not easy.

MR. GRAY: I am going back now to John Steuben.

THE WITNESS: Steuben?

MR. GRAY: Steuben. You are quite sure that you do not recall any kind of communication with or from him as late as 1944, 1945 or 1946?

THE WITNESS: Yes.

MR. GRAY: Dr. Evans?

DR. EVANS: Mrs. Oppenheimer, there has been a lot of talk here about the communists and fellow-travellers. Could you tell me so that you and I can understand the difference between a communist and a fellow-traveller.

THE WITNESS: To me, a communist is a member of the Communist Party who does more or less precisely what he is told.

DR. EVANS: He does what?

THE WITNESS: Rather precisely what he is told to do by the Communist Party.

I think a fellow-traveller could be described as someone to whom some of the aims of the Communist Party were sympathetic and in this way he knew communists. For instance, let us take the classic example that is bandied about all the time nowadays; that is, the Spanish War. Many people were on the side of the Republicans during the Spanish War. So were the Communists. I think the people who were not

communists and were on the side are now always known as fellow-travellers.

DR. EVANS: Did you ever try to get your husband to join the Party?

THE WITNESS: No.

DR. EVANS: You never did?

THE WITNESS: I was not a communist then.

DR. EVANS: How is that?

THE WITNESS: I was not a communist then. I would not have dreamed of trying to get anybody to be a member of the Communist Party.

DR. EVANS: Do you think you have been completely disillusioned now or are you still fuzzy?

THE WITNESS: No, I have been disillusioned for a long time.

DR. EVANS: Did you ever talk to your husband about some of the men that worked at the Radiation Laboratory and the possibility of there being communists, men like Lomanitz, Peters, Hawkins, and those?

THE WITNESS: As being members of the Communist Party?

DR. EVANS: Yes.

THE WITNESS: No.

DR. EVANS: I am not quite sure, but I thought there was some evidence here that some witness said that Mrs. Oppenheimer tried to talk to her husband about some of these people.

Do you remember that? That she tried to get him to stop his association with them. Was there such a thing as that in the record?

MR. GRAY: I think, Dr. Evans, you probably have reference to Mr. Lansdale's testimony. This is the thing I was referring to.

DR. EVANS: I just wanted to know. It was Lansdale's testimony. You have answered the question. I have no more questions.

MR. GRAY: I have one more.

In early 1944, where would you have been?

THE WITNESS: Los Alamos.

MR. GRAY: Did you stay there pretty constantly and regularly?

THE WITNESS: I went away once when my mother had pneumonic, but I forget what year that was.

MR. GRAY: Where did you go, then?

THE WITNESS: To Bethlehem, Pennsylvania.

MR. GRAY: You only left Los Alamos once in the year that you lived there during the war?

THE WITNESS: I went to Santa Fe sometimes.

MR. GRAY: Did you go to Berkeley?

THE WITNESS: I do not think so. I would say no.

DR. EVANS: Does your mother still live in Bethlehem?

THE WITNESS: She has until -- She has come and gone

quite a bit the last few years -- but until one or two years ago, they were in Bethlehem.

MR. ROBB: May I ask a couple of questions?

MR. GRAY: Yes.

BY MR. ROBB:

Q Mrs. Oppenheimer, did you used to read the People's Daily World?

A I have seen it, yes.

Q That is the West Coast Communist newspaper?

A That is right.

Q Did you see it around your house in Berkeley?

A I think it got delivered to our house on Shasta Road.

Q On where?

A On Shasta Road.

Q Who subscribed to it, you or Dr. Oppenheimer?

A I do not know. I did not subscribe to it. Robert says he did. I sort of doubt it. The reason I have for that is that I know we often sent the Daily Worker to people that we tried to get interested in the Communist Party without their having subscribed to it. So I do not know whether or not Robert subscribed to it. I know it was delivered to the house.

Q You say "we"; do you mean the Communists? Do you mean when you were a Communist?

A Yes, that is what I mean.

Q Tell me, Mrs. Oppenheimer, you said you knew this man Adelson.

A I think I have met him, yes.

Q Do you recall how you happen to know those men?

A Mr. Robb, I have read the letter from General Nichols quite a lot of times and I have naturally thought about a lot of things. The names Adelson and Pinsky were not unfamiliar to me. I do not know how I met them. I think I did.

Q Do you remember when there was some discussion about Frank Oppenheimer running for congress?

A I have heard that since. I do not remember it as of then, no.

Q You took no part in it?

A No.

Q Did you know some people named Bartlett?

A Bartlett?

Q Perhaps I can help you. Did they occupy the garage apartment at Frank Oppenheimer's place?

A I know some people did. I did not know that.

Q You did not know them?

A In that connection, the name Bartlett does not mean anything. I met the people who occupied that apartment but I do not remember them.

Q Did you ever discuss Adelson with Dr. Oppenheimer?

A I do not know.

Q By the way, did you ever hear of Steve Nelson given the nickname Stephen Decatur?

A No.

Q You mentioned that you still had a friend who people say was a communist. Was that Dr. Chevalier you had in mind?

A Yes.

Q You heard it said that he still is a communist?

A No, I have heard it said he was.

Q Did you know anything about his activities in communist causes?

A I think he went to Spanish relief parties. I know he had this party at his house at which Schneiderman spoke.

Q Had you finished your answer?

A I am trying to think if I knew anything else about him. I think I know no other facts in that direction.

Q Did you ever see his name in the Daily Worker or the Daily People's World as having endorsed the so-called purge trials in Russia?

A No.

Q You saw Dr. Chevalier in France last fall?

A That is right, in December.

Q In Paris?

A In Paris.

Q How long were you in Paris on that occasion?

A Well, let's see. We went over -- I think we spent two days and then went up to Copenhagen and came back, and I think we spent something like a week again. It may have been five days or it may have been a little longer than a week; I do not remember.

Q Was it on the first two days that you saw Dr. Chevalier?

A No.

Q You mean after you came back from Copenhagen you saw him?

A I think so, yes.

Q Do you recall how you happened to get in touch with him?

A Yes, I do.

Q Would you tell us that.

A I called his wife and said we would like to see them. She said that Haakon was in Italy, but she thought he would be back and she would let us know.

Q Do you remember how you happened to have her telephone number?

A It was in the book. I think it was in the book. I think I looked it up. On the other hand, I may have had a note from Haakon in my purse with the telephone number on it, which I would have taken along because if we went to Paris we wanted to see them.

Q Do you recall how you happened to know they were in Paris at all?

A Yes. I think Haakon wrote us.

Q How long before you went there?

A I think he has written us probably three or four times in the last few years.

Q I suppose he expressed a hope that if you came there you would look him up?

A Certainly.

Q Do you know how he happened to know you might come to Paris?

A I remember his wife saying to me that they had read in the paper that Robert was giving lectures in England.

Q This was the occasion of these Reith lectures?

A R-e-i-t-h.

Q Do you recall whomelse you saw in Paris on that occasion?

A Yes. Oh, my, now wait. We saw LePrince-Ringuet and we saw a number of physicists. I do not know whether both Auger or Perrin or whether it was just one of them. We went to the apartment of another physicist whose name I can't remember. I will have to ask Robert.

DR. OPPENHEIMER: May I answer? Goldschmidt.

BY MR. ROBB:

Q You saw a number of physicists. I don't care about

the names.

A We saw François and Yvonne de Rose.

Q I believe you had lunch with the Chevaliers or dinner.

A Dinner. We had dinner at their house.

Q And then did you take them to lunch or something?

A Oh, yes, no.

Q Did they take you to lunch?

A No. Harkon called for us and we went out to see Malraux.

Q Do you remember any discussion about Dr. Chevalier's passport difficulties?

A I do not remember it but it has been recalled to me since.

Q How was it recalled to you?

A I think Robert mentioned it to me.

Q Would you tell us what he had to say about it.

A He said that he had been asked whether Harkon had spoken to him about it and he did not remember it.

Q Did Dr. Oppenheimer tell you pretty generally what he had been asked about matters of which you had knowledge?

A Yes.

Q Did you meet a Mr. Wymans when you were in Paris on that occasion?

A Yes, I did.

Q How did you happen to meet him?

A He is a -- I don't know -- a classmate or something of Harvard. He was at the embassies. We had lunch with him.

Q Mrs. Oppenheimer, do you know or have you ever seen Paul Crouch?

A I do not think so, Mr. Robb. I have seen his picture in the paper a few years ago and I saw his picture in Time recently. He doesn't look to me like anybody I have ever seen.

Q Do you know this so-called 10 Kenilworth court episode about which there has been some controversy?

A Yes.

Q Do you recall such a meeting having taken place?

A No.

Q Would you say it did not?

A I would say it did not.

Q So far as you know, Paul Crouch has never been in your house?

A That is right.

Q You could not be mistaken about that?

A I could be mistaken about almost anything, but I do not think I am.

Q I understand that.

MR. GRAY: Let me ask a question while he is looking at his paper. When was it that you lived at this address that

you gave to which the People's World came?

THE WITNESS: When I first got married to Robert.

MR. GRAY: This was in 1940?

THE WITNESS: Yes.

MR. GRAY: Do you remember seeing People's World in the house as late as 1941?

THE WITNESS: I do not know. I think the paper came to the house at 10 Kenilworth Court, too, but how long it came there, I do not know.

MR. GRAY: You lived at Kenilworth Court after this-- I have forgotten the address that you mentioned.

MR. SILVERMAN: Shasta.

MR. GRAY: You lived at Kenilworth Court after you lived at Shasta Road?

THE WITNESS: Yes.

MR. GRAY: And you think the People's World came to Kenilworth Court?

THE WITNESS: I think so.

MR. ROBB: That is all I care to ask.

MR. SILVERMAN: I think I have one or two questions to ask Mrs. Oppenheimer.

BY MR. SILVERMAN:

Q Mrs. Oppenheimer, Mr. Gray asked you about your leaving Los Alamos and you referred to a visit to Bethlehem, Pennsylvania when your mother had pneumonia. I think you gave

a date in 1944.

A I gave no date because I do not remember when it was.

Q I thought that she adopted a date that had been given. It had been suggested that it was May 1945. Would you recall one way or the other?

A I am afraid I wouldn't.

Q Did you in fact attempt to dissuade your husband from making contributions or having associations with Communist Party people?

A I think not.

MR. SILVERMAN: That is all.

MR. GRAY: Are you familiar with a Thornwall Telephone Company?

THE WITNESS: Cornwall -- I think that is a Berkeley exchange.

MR. GRAY: Thornwall 6236, does that mean anything to you?

THE WITNESS: No.

MR. GRAY: That never was your telephone number?

THE WITNESS: I do not know. It does not mean anything to me, Mr. Gray. I do not remember our Berkeley telephone number.

MR. GRAY: Could it have been Dr. Frank Oppenheimer's number?

THE WITNESS: All I can say is that I do not know.

MR. GRAY: Thank you very much, Mrs. Oppenheimer.

(Witness excused.)

MR. GARRISON: Could we have a short recess?

MR. GRAY: Yes, we will recess for a few minutes.

(A short recess was taken.)

EN: AJG
ED: FLS

bowflsg

Whereupon,

JERROLD R. ZACHARIAS

a witness having been previously duly sworn, was called in rebuttal, examined and testified as follows:

MR. GRAY: I think the record should show that Dr. Zacharias is here, as I take it Dr. Bush was, in the capacity of what we have informally referred to as rebuttal witnesses.

MR. GARRISON: Yes, Mr. Chairman.

MR. GRAY: It is my duty, Dr. Zacharias, to remind you that you continue under oath in the proceeding.

THE WITNESS: I do.

MR. GRAY: Mr. Marks.

DIRECT EXAMINATION

BY MR. MARKS:

Q Dr. Zacharias, I wish you would state for the record whether or not I asked you to read testimony which has been given in these proceedings by Mr. Griggs, when you arrived this morning?

A Yes, you did. You gave me that and I read a part of the Griggs testimony that had to do with the summer study and the so-called ZORC.

Q Testimony given before this Board by Mr. Griggs described a meeting in the fall of 1952 in Cambridge, a meeting of the Scientific Advisory Board. Were you present at

that meeting?

A I was present for a panel discussion that had no bearing on the subject at issue, a small panel discussion, and present to give a report of the summer study findings to the full Science Advisory Board of the Air Force.

Q I don't understand what you mean when you say you were present with respect --

A I am not a member of the Science Advisory Board. There was a three day meeting. I was present for a subcommittee meeting which has no bearing on the present discussion and present at a report made by the Lincoln Laboratory to the Science Advisory Board. It is that full discussion of the full committee that I think comes into question here.

Q Did you make any presentation to the Scientific Advisory Board on that occasion?

A I did.

Q Will you tell us whether or not in the course of any of the meetings of the Scientific Advisory Board at that occasion you had occasion to say anything about or do anything about a term that has been used -- ZORC?

A I testified under oath the last time I was here, and I will repeat the testimony, that I had never heard of any such organization or name of organization or anything resembling it until I read it in an article in Fortune Magazine.

Q And when would that have been?

A When that magazine article came out, in May of 1953, a year after the beginning of the summer study, about.

MR. ROBB: Pardon me. I suppose that is an answer to the question. Maybe the witness would like to have the question read back. I am not sure that is a direct answer to the question.

MR. MARKS: Let us read it back, Mr. Reporter.

(Question read by the reporter.)

MR. MARKS: I would like to ask another question.

THE WITNESS: Do you want me --

MR. ROBB: I just want to make sure the witness understands the question.

MR. MARKS: May we proceed, Mr. Robb?

MR. ROBB: Certainly. I just want to be fair to the witness, that is all.

MR. GRAY: You may proceed, Mr. Marks.

MR. MARKS: Thank you.

BY MR. MARKS:

Q Did you or did you not, Dr. Zacharias, on the occasion of the 1952 Scientific Advisory Committee meeting, in the fall of that year in Cambridge, write on the blackboard in the course of that meeting the term "ZORC" and explain it?

A To the best of my knowledge and belief, I did not write on the Board the letters "ZORC". May I state this a

little more fully?

Being a school teacher, I naturally emphasize things by writing on the board. This is one of our chief methods for emphasis. I don't remember seeing any reason now why I should have wanted to emphasize my own name. I had been properly introduced and Lauritsen was a member of the Science Advisory Board, and was present in the audience. So all I can say is to the best of my knowledge and belief, I did not write any such thing on the blackboard. I have even gone so far as to check the memory of a few other people on this very point, and none who has been questioned remembers any such thing.

Q Are you or are you not clear as to when you first heard the term "ZORC"?

A I am very clear that I first heard the term "ZORC" when I read it in Fortune Magazine of May 1953, nine months after the meeting of the Science Advisory Board in question.

MR. ROBB: I am awfully sorry. Could I have that answer read back?

(Question and answer read by the reporter.)

BY MR. MARKS:

Q Dr. Zacharias, I should be, but I am not, clear in my memory as to whether when you/appeared in these proceedings you testified concerning your participation in and the circumstances under which the so-called Lincoln summer study

originated. I would like to ask you now to describe the circumstances or such of them as you know about under which the Lincoln summer study originated and the specific purposes, if you know them, of that summer study.

A I was from the beginning of the Lincoln Laboratory until I resigned shortly after the end of the summer study associate director of the Lincoln Laboratory.

Q When did the Laboratory originate?

A It is hard to know exactly. It was in June of 1951, roughly. You can't nail it down too tight. So that for approximately a year and a half I was associate director of the Lincoln Laboratory. In roughly March of 1952, I visited Pasadena-Los Angeles area -- in fact, as I remember it, I paid a visit to the Hughes Aircraft Company. One evening Dr. Lauritsen, and I had a discussion about air defense, and the participation of Lincoln and how it would be possible to make an air defense in the face of a growing threat, a threat growing in number of Russian weapons and in the variety of their means of delivery. Dr. Lauritsen and I thought it would be a good idea to set up a study group to investigate the question of defense of the North American continent.

I got in touch with Dr. Hill, then the director.

Q The director of what?

A Of the Lincoln Laboratory. More specifically, he was deputy director, but indeed running the laboratory. We

decided that it would be a good thing to do, that it would help air defense if we did it, and it would also likely help the Lincoln Laboratory's growth.

We had a discussion about this with Dr. Lauritsen, Dr. Oppenheimer, and Dr. Rabi. I remember that it was in a room in the Hotel Statler. Five of us, as I remember it, certainly Dr. Hill was there.

Q When would this have been?

A In early April or the end of March of 1952. We discussed the possibility of going ahead with the study, and one of us, namely either I or Dr. Hill, made the suggestion that the prestige of Drs. Oppenheimer, Rabi and Lauritsen would help to bring in some of the bright people who would otherwise find other things to do.

They agreed to help with the study and did, not on a full time basis. We proceeded to try to recruit people for the study, some from within the Lincoln Laboratory -- a few within the Lincoln Laboratory, so as not to deplete the Lincoln Laboratory force -- and several or many from the outside.

The summer study got going about the first of July, 1952, and continued for two months thereafter, with Drs. Oppenheimer, Rabi and Lauritsen participating on a part time basis in the initial discussions and in the terminal discussions.

BY MR. MARKS:

Q What were the specific purposes of the summer study as they were conceived by you in its inception?

A The purpose of the summer study was simply this. We knew that the Russian threat might grow in a variety of ways. The types of aircraft, the types of delivery means, including ballistic missiles and so on would increase, and we wanted to see whether the kind of air defense planning that was going on and the air defense work going on within Lincoln was appropriate to the growing threat. There is no sense in trying to make an air defense against yesterday's airplanes. The defense that one develops has to be against the airplanes that will be in being and threatening when the air defense is in being. Remember, that technical discussion and technical work has to precede use by a number of years.

Q Dr. Zacharias, was it ever suggested to you or intimated to you by Dr. Oppenheimer that the summer study should have other purposes?

A Not that I can possibly remember.

Q Was it ever a contemplated purpose of the summer study to bring about a reduction in the power of the Strategic Air Command?

A Certainly not. In fact, it is clear to anyone who tries to think of defense of the continent -- let me be a little specific about this -- that there are essentially what you

might call four possible rings of defense. One is an innermost last ditch affair, largely from the ground with the aid of missiles or antiaircraft guns; a second ring, which can be provided by interceptor aircraft of short range and moderately close to home, a third ring which is further out away from our shores, and away from our borders, and a fourth which is the destruction of enemy bases by means of long range bombardment aircraft. All of these elements for defense of the continent are terribly important, regarded as very important by all members of the study group, and the Strategic Air Command is included in the last one of the four. Not last in order of priority, but only last because if you start from the inside out, you get to Russia last.

Q Was there any purpose in the summer study to effect a reduction in the budget of the Strategic Air Command?

A There certainly was not.

Q Was there ever any purpose in the summer study, or was any such purpose ever suggested to you, of studying or considering submarine warfare?

A The purpose of the summer study was primarily air defense and defense of the continent. Several of us had participated in the project on anti-submarine warfare two years prior to this. We saw no reason to examine the situation again. Maybe I have not answered the question quite. You said was it ever suggested. It is very difficult to remember

who suggested what. I certainly remember no emphasis at all on the anti-submarine problem.

Q Was there any consideration in the summer study of the problem of defense against missiles launched from submarines?

A Yes.

Q Would you tell us about that?

A Yes, there was. In discussing the various types of missiles, those launched from ground and those launched from ships and those launched from submarines, we went through a certain amount of argument to prove to ourselves that the best defense against submarine launched missiles was an attack against or defense against the submarine itself. We felt that we would not be able to set up a defense against missiles once launched from submarines. That was a more difficult problem than the counter-submarine problem. There was argument with a number of people in the Navy on this very point.

Q When you speak of argument at the summer session, who do you have in mind as involved in that argument, if anybody?

A The summer study group that was full time worked on that. I don't have the names directly at my fingertips. Those of us who were involved full time besides myself were Lloyd Berkner, Brockway McMillan from the Bell Telephone Laboratories, Julian West from the Bell Telephone Laboratories,

Wippanie, M. M. Hubbard of the Lincoln Laboratory. I would rather find a list than to try to site one here.

Let me say that the detailed discussion of relegating the problem of countering missiles launched from submarines, relegating that to the counter submarine force, was largely done by the full time members of the group.

Mr. Griggs has testified that "we", that is, I take it, he and his associates, whoever might have been, were concerned with the fear that the summer study might get into things which he and his associates regarded as inappropriate for Lincoln, and as of questionable value to the Air Force. He referred specifically to the strategic air arm and allocation of budget between the Strategic Air Command and Air Defense Command.

You have already commented on these matters. I think at this point in his testimony, he went on to say that we also were very much concerned in the early days of the formulation of the Lincoln summer study because it was being done in such a way that had it been allowed to go in the direction in which it was initially going, every indication was that it would have wrecked the effectiveness of the Lincoln Laboratory.

This, Mr. Griggs said, was because of the way the thing was, the summer study was handled administratively.

MR. ROEB: What page are you reading from, Mr. Marks?

MR. MARKS: This is from pages 2617 and 2618 of volume 14.

BY MR. MARKS:

He went on to say, "So far as I know, it was not because of any direct action on the part of Dr. Oppenheimer. On the other hand, I felt at the time that Dr. Oppenheimer should have been well enough informed and alert enough to see that this would be disastrous to the Lincoln summer study."

MR. ROBB: Mr. Chairman, I think it fair to say in the interest of accuracy that Mr. Marks was not reading a verbatim portion of the record when he did that. I think you left out several things and paraphrased in other cases, did you not, sir?

MR. MARKS: May I show the witness the transcript?

MR. ROBB: I think the record ought to reflect whether or not you read from the record verbatim or whether or not you paraphrased or omitted certain portions of what you have been reading.

MR. MARKS: This is a rather pointless discussion.

MR. ROBB: It is not pointless to me.

MR. MARKS: I did change some "we's" to "they". Let me, if I may, show Dr. Zacharias the portion of the transcript from which I was reading.

MR. GRAY: I think you should read the portion, whatever it was, Mr. Marks, and then put your question to the

witness.

BY MR. MARKS:

Q I would like to read to you, Dr. Zacharias, a portion of the transcript, namely, pages 2617 and 2618, relating to testimony of Mr. Griggs, and ask you whether you have any comment to make on it. Starting at page 2617:

"Q. Was that the main object of the Lincoln summer study, to find ways to improve our air defense?

"A. Yes, sir.

"Q. And did the Lincoln study ever recommend the giving up of any part of our strategic air power?

"A. No, not to my knowledge.

"Q. I think you have already said so far as your knowledge goes, Dr. Oppenheimer did not recommend that?

"A. That is right. I would like to amplify my answer on that for the benefit of the Board, since this is the first mention of the summer study in this much detail.

"We were concerned by the thing I have already mentioned, that is, the fear that the summer study might get into these things which we regarded as inappropriate for Lincoln, and as of questionable value to the Air Force -- I refer to the giving up of our strategic air arm, and the allocation of budget between the Strategic Air Command and the Air Defense Command-- but we were also every much concerned in the early days of the formation of the Lincoln summer study, because it was being

done in such a way that had it been allowed to go in the direction in which it was initially going, every indication was that it would have wrecked the effectiveness of the Lincoln Laboratory. This was because of the way the thing was, the summer study was being handled administratively.

"So far as I know, it was not because of any direct action on the part of Dr. Oppenheimer. On the other hand, I felt at the time that Dr. Oppenheimer should have been well enough informed and alert enough to see that this would be disastrous to the Lincoln summer study."

Now, unless Mr. Robb would like me to read more, which I would be glad to do, I would like to ask Dr. Zacharias the question, if he has any comment to make on the passage that I have read.

MR. ROBB: No, Mr. Chairman, it is not my satisfaction. It is a question that I merely want the record to be accurate.

MR. GRAY: The witness will proceed with any comment he has to make.

THE WITNESS: Those of us who were trying to start the summer study felt -- let me say specifically I felt -- that we were trying to help air defense and also the Lincoln Laboratory. That the Lincoln Laboratory is an important part of our air defense development system and strengthening the Lincoln Laboratory would strengthen air defense.

Correspondingly we also wanted to see whether the technical means that we were trying to employ were adequate. Remember that this was at a time when the early warning for the Air Force against incoming raids was pitifully short in time. Substantially no warning until enemy bombers might be directly on us. We therefore wanted to look at the early warning, the air battles, and possibilities of defense against new types, new mechanisms of delivery. This was our objective. This is something of interest to the Air Force and specifically of interest to the three services. Remember, the Lincoln Laboratory is an Army, Navy, Air Force laboratory, despite the fact that the Air Force contributes the major share. So we felt that we were helping the Air Force, or that we would help the Air Force by our efforts.

I would like to make the comment that Dr. Griggs, the witness there in question, was then I think called the chief scientist for the Air Force, and as we saw it, or as I saw it -- we is indefinite, that is why I use "I" -- as I saw it, he was doing everything he could to prevent our starting this summer study. He tried to influence people not to join it. He tried to influence President Killian and Provost Stratton to prevent the initiation of the summer study. By his own admission -- Dr. Grigg's own admission -- the summer study turned out to be a good thing. This is what we thought it would be. You can never promise in advance, before you start

a study, what the study will end up with. You can't be sure that it will turn out to be fruitful, whereas this one, in my opinion, did turn out to be fruitful.

Dr. Grigg's efforts -- let me use a strong word -- to sabotage the summer study from a position of power as chief scientist for the Air Force I regarded as unwise, but not subversive. I would not want to bring up Dr. Griggs on charges of being disloyal in his effort to sabotage an effort in which I was the major promoter. However, let me say rather informally that it is a bit of a pity that dueling has gone out of style. This is a very definite method of settling differences of opinion between people than to try to bring out all the detail in a hearing.

About the administrative part of that question, to my memory there were no administrative changes involved in the initiation of the summer study. We had planned to hold it in the Lincoln Laboratory somewhere, that I was going to direct it, as the Director of the Lincoln Laboratory I would thereby report to Dr. Hill on this.

Grigg's efforts to stop the summer study did result in a delay of several weeks, critical weeks, as a matter of fact, in trying to gather the people to form a summer study. Remember a summer starts at a fairly definite time for university people, and a delay of three weeks in my opinion then and in my opinion now resulted in our not having as large

a group or even as capable a group as we might have had if it were not for the obstructive tactics used by Griggs in this matter.

But the administrative detail of the running of the summer study was carried out the way it was initially conceived.

MR. MARKS: I have no further questions.

MR. GRAY: Mr. Robb.

CROSS EXAMINATION

BY MR. ROBB:

Q Doctor, you either knew or assumed, did you not, that in his position with respect to the Lincoln summer study Dr. Griggs was following out the policies of his superiors in the Air Force?

A Is that a loaded question, sir? I had no way of knowing whether he was carrying out orders or acting on his own initiative. When I say "knowing" I use the word very carefully. I believe, however, that he was acting on his own initiative.

Q You think he was just carrying out a personal vendetta?

A I think not. I think again that he was not doing this because of any personal animosity toward me or to some of the other members of the group. I would not want to go on record to say that he was doing it because of a personal animosity toward Dr. Oppenheimer. I am sure that Dr.

Oppenheimer's presence on the group colored Griggs' actions and thoughts considerably.

Q Why?

A The question is why do I think so or why were they colored?

Q Why do you think that?

A Because Griggs spoke to some people in a very derogatory way regarding Dr. Oppenheimer.

Q What reason do you have for believing or feeling, whichever it is, that Dr. Griggs' attitude toward the Lincoln summer study was not in accord with the wishes of his superiors in the Air Force?

A I didn't say that. I said that I thought he was acting on his own initiative.

Q All right.

A That the stimulus for doing what he was doing came from him. It is perfectly possible for a man to convince his superiors to do something, or to order him to do something that he wants to do. I have talked with Mr. Finletter a little about the early history here, and his mind was rather vague on the subject, because I wanted to be sure that it was not Mr. Finletter who was directing these delays.

Q At the time that Dr. Griggs made his position on the summer study known to you, did you communicate with any of Dr. Griggs' superiors in the Air Force to see whether or not

Dr. Griggs was carrying out their wishes?

A No, I don't remember. I remember some discussion with Mr. Norton, but I don't remember the substance of it very much. It certainly would not have been in this form.

Q Can you tell the Board, Dr. Zacharias, any single specific fact or circumstance which indicated to you that Dr. Griggs' attitude in respect to the Lincoln summer study was not acting in conformity with the wishes or orders of his superiors?

A Mr. Robb, I would have had to be there to answer that question. When a man is acting or doing something, if he is in military uniform, I think he can always rely -- he can always depend on being able to say that he is acting under orders. Civilians in the military don't always do that.

Q Dr. Zacharias, you have testified, have you not, that in your opinion Dr. Griggs or Dr. Griggs -- strike that.

You have testified, have you not, that Dr. Griggs' attitude in your opinion was his personal attitude, and did not necessarily reflect the attitude of his superiors? Is that a fair statement?

A Yes, I have no proof of that, however.

Q Yes.

A I have no proof of that. I have tried to keep that part of the record clear.

Q Yes. So is it not a fair question, Doctor, to ask

you what your proof; if any, is?

MR. MARKS: The witness has already said he had no proof.

THE WITNESS: That is a very telling kind of question in the sense --

BY MR. ROBB:

Q Thank you.

A In order to get to the answer I would have to pull into my memory all of the details of the back and forth talk on this and in particular on what Griggs said to me and said to others. In order to get this thing clear, I think it would take a fair time of the committee.

Q We have lots of time, Doctor. Your answer is that you can't do it as of now, isn't that right?

A Yes.

Q Doctor, so that there may be no misunderstanding, may I ask you, sir, is it your testimony that the first time you ever heard this name or expression "ZORC" was when you read it in the Fortune article in May 1953?

A Yes, sir.

Q Just so we can be sure we are talking about the same thing, I have before me that article or a photostat of it, and I will read you a few sentences from it to make sure that is what you are talking about. The byline is "ZORC Takes up the Fight," "A Test of Teller's Thermonuclear Device was

scheduled for late 1952 at Eniwetok. Oppenheimer tried to stop the test. In April 1952, Secretary Acheson appointed him to the State Department Disarmament Committee of which he became chairman. Here was generated a proposal that the President should announce that the U.S. had decided on humanitarian ground not to bring the weapon to final test and that it would regard the detonation of a similar device by any other power as an act of war. Mr. Truman was not persuaded. That project cost Oppenheimer his place on the General Advisory Committee. When his term expired that summer he was not reappointed. Neither were DuBridge nor Conant who supported him throughout. Now came a shift in tactics. At a meeting of scientists --"

MR. GRAY: Let me ask, are you going to ask a question about the substance of the article, or is this for the purpose of identification?

MR. ROBB: It is just for the purpose of identification. The first paragraphs I read merely to get the time fixed and I don't intend to question the witness with those.

"Now came a shift in tactics. At a meeting of scientists in Washington that spring there formed around Oppenheimer a group calling themselves ZORC, Z for Zacharias, an MIT physicist, O for Oppenheimer, R for Rabi, and C for Charles Lauritsen."

BY MR. ROBB:

Q Is that the piece to which you referred?

A Yes, sir, it is.

Q When you read that reference to ZORC, were you surprised by that name?

A Yes.

Q You never heard it before?

A I had never heard it before.

Q You are sure about that?

A I am sure about that.

Q You could not reasonably be mistaken about it?

A I could not be reasonably mistaken about that.

Q Did that reference rather anger you?

A Very much so.

Q Why?

A Because it implied that there was a cabal group of people who were trying to do things or to influence policy one way or another by existing in a group. To the best of my memory, which certainly is not adequate here, I can't think of any time when those four people sat together alone in a room to discuss anything. In other words, there was so little to their being a group that if there was a time -- there may have been -- when those four people, including myself, were together alone in a room, it would surprise me very much.

Q In other words, you thought it was quite a material point whether there had been such a group calling itself ZORC,

or not?

A I felt that it was a journalistic trick to bring into focus the kind of scurrilous charges that were being made in the article.

Q You thought it was an important point?

A I thought it was an important journalistic trick. This is very different from its being -- yes, I agree, I thought it was -- if it were true, if it had been true -- it would have been a point. Therefore, maybe to get to what you are thinking I believe it is germane to these hearings.

Q Yes. In other words, if it were true as you have testified, it tended to show that there was a cabal.

A Yes.

Q Was Dr. Griggs present at that meeting of the Scientific Advisory Board in Boston or Cambridge in the fall of 1952?

A I don't know.

Q How many people were present there?

A I don't know exactly. There was rather a room full, a room that might hold 50 to 100. A number I think given in Griggs' testimony.

Q You did address the meeting, I suppose?

A I did.

Q And never having heard the expression or dreamt of it, you could not have written it on the blackboard. Is that

your testimony?

A No, sir. Never having heard of something, you could still -- letters might go together. Remember, this is a rather technical point here. Let me say I never heard of it and certainly did not write it on the blackboard.

Q Doctor, if you were surprised and angered when you saw that expression "ZORC" in the Fortune article in May 1953, you could not very well have written it on the blackboard in the fall of 1952, could you?

A That is my feeling, sir.

Q Aren't you sure about that?

A I am as sure of that as I am sure of anything in my memory for which I don't have written documentation. Let me say this, if someone presented me with a photograph of the blackboard at that time with me in front of it, I would say sure, that must be it. But my memory aids in this are simple. I see now no reason why I should have put those initials there for any point of emphasis that I might have wanted to make. Remember that I was at that meeting trying to impress the Science Advisory Board with the sum of the results of the summer study, and that there were tangible results. Some of the people in the group were impressed by those results. I had no need for recourse to prestige. The results stood on their own feet as they still do.

Q Just to draw the issue plainly, Dr. Griggs has

testified here that you wrote those letters on the board and explained that Z was Zacharias, O was Oppenheimer, R was Rabi and C was Charlie Lauritsen. Did that take place?

A To the best of my memory, it did not take place.

Q Could you reasonably be mistaken about it?

A I am afraid I am a scientist, sir, and I could be mistaken about anything that is not written down in my notebook.

Q Aren't scientists usually pretty accurate?

A No more accurate on things of this sort than anyone else. I think if you wanted to establish this point very carefully you might have to call a fair number of the witnesses of the people at that meeting.

Q Do you recall at that meeting in the fall of 1952 that you were anxious to impress people that Dr. Oppenheimer was participating or had participated in this study in some way?

A No, sir. I had in my mind two most important things. One was to get going on an early warning system, and the second to get going on a remote intercept system. I wanted those understood in a technical way.

Q Is there any other meeting that you can think of that that incident described by Dr. Griggs might have occurred?

A I can think of no other meetings where Dr. Griggs was present, and like this meeting, I can think of no reason for having written such things on the board anywhere.

Q So far as you know you have never written such letters on the board?

A As far as I know I have never written any such things on the blackboard. I might do it now because it is a short word and is, as I say, a neat journalistic trick. Whether all journalistic tricks are dirty I don't know. I rather feel this one was.

Q So far as you know, you never used that word "ZORC" prior to seeing it in the Fortune article?

A Yes, sir. I did not use that word prior to seeing it in the Fortune article.

MR. ROBB: That is all I care to ask.

MR. GRAY: Dr. Zacharias, if you were today shown a photograph of the blackboard and the letters "ZORC" on the blackboard and you standing beside it with a piece of chalk in your hand, you would say then "I was mistaken in my testimony"?

THE WITNESS: What with the present trend in doctoring photographs, I might want to question the photographer.

MR. GRAY: That was my next question. Would your reaction be, "I did actually do this" or would your first reaction be that must be a doctored photograph?

THE WITNESS: My first reaction would be one of considerable surprise to the extent that I would doubt the veracity of the photograph and would want to question

the photographer.

MR. GRAY: Earlier when you were before the Board, you testified that you had no knowledge of the origin of the nomenclature. This refers to "ZORC", now. Then you said, "I do know one friend of mine went around to a meeting of the Physical Society and hunted for people that had heard of it, found one, and I would rather not mention his name, because it has nothing to do with this thing. He may have heard it, or it may have been the invention of the man who wrote the article."

You were not asked, Dr. Zacharias, who this man was. I would like now to ask you --

THE WITNESS: You would?

MR. GRAY: I would like to, yes. Who is the man who had heard of it?

THE WITNESS: This is a second hand report. The man who said he had heard of it was Alvarez. My memory of the man who told me of this is James B, Fisk.

MR. GRAY: I asked you this question because Mr. Griggs testified very clearly that he saw you perform this act of writing the letters on the blackboard, and you have testified pretty strongly that you think it hardly possible that this happened.

Dr. Zacharias, in a rather long response to a question from Mr. Marks, inviting comment on some testimony

of Mr. Griggs which was read, you made some observation about dueling having gone out of style. Do you mind telling me -- I didn't stop you when you were giving your answer, because I have tried very hard not to restrict witnesses in their answers -- what was your reference to dueling?

THE WITNESS: I meant that where there are personal differences that are very strong, that in the old days some of these were settled by dueling. Let us take the McCarthy-Stevens difference.. It might well have been settled that way rather than at such extensive length. Apropos of this, having read some of Dr. Griggs' testimony, my blood begins to boil a bit. I feel no great liking for Dr. Griggs at this particular point.

MR. GRAY: Is this only since you have read his testimony that you have no liking for him?

THE WITNESS: I would say that my respect for Dr. Griggs has been declining rapidly over the past two or three years, and it hits a rather low point with this sworn testimony of his.

MR. GRAY: Did you have this feeling about him at the time of the summer study?

THE WITNESS: It certainly was not as strong then as it is now.

MR. GRAY: If dueling had not gone out of style at the time of the summer study, would you have felt strongly

enough to challenge him at the time of the summer study?

THE WITNESS: Perhaps.

MR. GRAY: So you did feel pretty strongly?

THE WITNESS: I felt pretty strongly then.

MR. GRAY: And it is not just his testimony before this Board?

THE WITNESS: Certainly the testimony has added to it.

MR. GRAY: You stated that you felt that Dr. Griggs attempted to sabotage this project, I believe.

THE WITNESS: I said that I wanted to use a strong word. He tried in every way he could to stop it, to prevent its happening.

MR. GRAY: Do you wish to withdraw your characterization of it as sabotage?

THE WITNESS: I don't know the full implication of withdrawing this.

MR. GRAY: This is not involved --

THE WITNESS: I said it was a strong word with color to it. I think it is more appropriate than not. Let me say it this way. The word sabotage has many implications. One is that it was being done without the knowledge of many others. Griggs was quite open in his opposition to this summer study. In that sense I would only say that he was doing his best to stop or to prevent the project.

MR. GRAY: I asked you whether you thought that was a very serious matter at the time.

THE WITNESS: Yes, I did.

MR. GRAY: And you felt, I believe you said, that it was resulting in appreciable delay?

THE WITNESS: It did, sir.

MR. GRAY: Appreciable delay was resulting from Mr. Griggs' --

THE WITNESS: An appreciable delay did result from it.

MR. GRAY: Did you discuss these problems of getting under way with the summer study with anybody other than Mr. Griggs who was identified with the Department of Defense?

THE WITNESS: I don't remember exactly who we discussed this with.

MR. GRAY: My purpose in asking the question is not to confuse the situation at all. I am simply asking what you did, if anything, to overcome the obstacles which you felt Mr. Griggs was putting in the way of something that you also felt was extremely important to the security of the country.

THE WITNESS: Remember that Dr. Griggs was working on my superiors, namely, Dr. Killian and Dr. Stratton, and I talked with them about it. I would have to look at the record to see whether I talked with General Craigie. I very likely did, but I can't be certain.

MR. GRAY: So if you had a protest or complaint to

make you would have made it normally through Dr. Millian and Dr. Stratton, and not the Air Force people?

THE WITNESS: Griggs' major attempt to stop the project was his trying to influence them, at least from my point of view at that time. I didn't know of all the things that he was doing.

MR. GRAY: You said you talked with Mr. Finletter about this. When was that?

THE WITNESS: I talked with Finletter --

MR. GRAY: Was it within the last year?

THE WITNESS: Within the last eight months, I believe. He was just vague on the subject, and I didn't press it.

MR. GRAY: That was not in connection with your appearance before this Board?

THE WITNESS: It was not, no, sir. It was something like last June.

MR. GRAY: Have you ever known of a study under contract with the Armed Services, say at MIT, as an example, in which there was official complaint by the services that the reasonable bounds of the study had been exceeded?

THE WITNESS: I know of none.

MR. GRAY: You don't have any?

THE WITNESS: I know of no official complaint, not even in this case.

MR. GRAY: You know of no study, for example, which

might have concerned itself with electronic problems which came up with recommendations with respect to foreign policy?

THE WITNESS: I know of a study that was concerned with electronics problems and also discussed questions of foreign policy. I was not a member of that study.

MR. GRAY: But you have heard of it?

THE WITNESS: Yes, sir.

MR. GRAY: And you never heard that there was any complaint from the Defense Department about the study having exceeded its reasonable bounds?

THE WITNESS: I was not a member of that study. I did truly not ever heard of this complaint.

MR. GRAY: If you were directing a study which had to do with electronics, a pretty clearly defined field, and it started to come up with recommendations with respect to foreign policy, would you feel that an official of the Defense Department who urged that you stick to electronics was acting with impropriety?

THE WITNESS: I think I would not direct a project that was as restrictive as that, sir, as to be restricted only to electronics.

MR. GRAY: I am not going to press you further, because I don't think it is getting us anywhere.

THE WITNESS: No.

MR. GRAY: The question was related to the somewhat

conflicting testimony here about whether the summer study was tending to get into budget matters, for example, as distinguished from what was to have been the main purpose of the study.

THE WITNESS: The study did not get into budget matters.

MR. GRAY: And it did not tend to at any time?

THE WITNESS: And did not intend to at any time. One must not confuse the word "budget" with what things might possibly cost. In other words, you can't make a technical evaluation of anything without trying to decide whether it could be afforded, whether it is possible to have that much money available to make what you want. But that is not a budgetary question. That is a technical question.

MR. GRAY: Do you think that the writer of the Fortune Magazine article is the originator of the four letter word we have been discussing?

THE WITNESS: I have no idea.

MR. GRAY: You are saying you don't know where it originated?

THE WITNESS: I don't know.

MR. GRAY: Dr. Evans, do you have any questions?

DR. EVANS: Dr. Zacharias, did you ever know a Robert M. Zacharias?

THE WITNESS: No.

DR. EVANS: He was a classmate of mine. I just wondered if he might be a relative of yours.

THE WITNESS: No, sir. I come from Florida.

DR. EVANS: I suppose I ought to know this, but I don't. Do you know why Griggs was so opposed to this study?

THE WITNESS: I don't know. I think he makes it pretty clear in his testimony. He was opposed to this for one thing because of Dr. Oppenheimer's possible participation, and he was opposed to it because he said he thought it might alter the course of the Lincoln Laboratory, an air defense laboratory. This is his own testimony. I only paraphrase it. It is better given there.

DR. EVANS: That is all.

MR. GRAY: Mr. Marks.

REDIRECT EXAMINATION

BY MR. MARKS:

Q Dr. Zacharias, I am not sure I caught one of your answers to a question Mr. Robb put, but I think you said something to the effect that you had never been alone in a room with Rabi, Lauritsen, Oppenheimer.

A I said I don't remember any such circumstance, only to lend weight to the fact that I know of no such organization. It is certainly possible to have any four people in a room, especially physicists who know each other well. I didn't make the point that they had never been together. The point is

that the only time I remember we were together there were other people present.

MR. MARKS: I have no further questions.

RE CROSS EXAMINATION

BY MR. ROBB:

Q Dr. Zacharias, did you undertake to find out who wrote that Fortune article?

A I didn't undertake to find out. It was found out pretty quickly.

Q Did you ever talk with that gentleman?

A No, sir, I never have. I understand that he has recanted considerably.

Q What was his name?

A The name is Charles Murphy, as I understand it.

Q Did you make any protest or representations either to him or to Fortune about the article?

A No, sir.

Q You didn't write to the editor or anything like that?

A No.

Q You read the article pretty carefully.

A I read it once or twice.

MR. ROBB: That is all.

MR. MARKS: I do have one other question, if I may.

MR. GRAY: All right.

THE WITNESS: Could I interpose?

MR. GRAY: Yes.

THE WITNESS: Mr. Robb's question about my writing to the editor of Fortune, or so on, might be used as a gauge of my anger on reading it. I think it is not such a gauge. There are many of us who try to work with the military. The more we can do to keep our names and ideas out of the public, away from the public, the better can we get along with the military and work with them. I would not write a letter to the editor in protest or do anything of that sort because of straining relations with people who, like all the rest of us, are people, too, and like to get credit for what is going on. You see, there is a simple theory that you can either get something done and get credit for doing it, and not both. The scientific people who try to work with the military try as much as possible to get credit for what gets done allocated to the military. In this sense, in this kind of context, I would not write a thing of this sort, and therefore my answer to the question could not be used to indicate that my blood pressure didn't hit the top when I read the article.

MR. ROBB: I was not intending to indicate that. Your point is the fact that you didn't write doesn't show you were not all wrought up about it.

THE WITNESS: That is right.

REDIRECT EXAMINATION

BY MR. MARKS:

Q In response to a question by the Chairman, Dr. Zacharias, I think you indicated that the first use of the term "ZORC" by a scientist that had come to your knowledge was attributed to Alvarez. Did I understand --

MR. ROBB: I don't think that is what he said.

THE WITNESS: No, I didn't say that.

MR. MARKS: I am sorry. I didn't understand that testimony, Mr. Chairman, and I would like to see if I couldn't understand it.

MR. GRAY: I think Dr. Zacharias testified that after he first heard about the "ZORC" phrase and tried to find out if anybody else had heard about it, he found one scientist who indicated that he had.

THE WITNESS: I found out second hand.

MR. GRAY: He found out second hand that there was a scientist who had heard of it and that scientist was Alvarez.

MR. MARKS: Thank you, that clears it up.

MR. GRAY: I am sorry to hold you, Dr. Zacharias, but that leads me to another question. Credibility of witnesses is now involved. What are your personal relationships with Dr. Alvarez, as you see them? Are you on friendly terms?

THE WITNESS: I would say moderately friendly. I would say he and I have never been, that I can remember it,

fond of each other.

MR. GRAY: Have you ever felt strongly enough about it to wish that dueling had not gone out of style as far as Dr. Alvarez is concerned?

THE WITNESS: Oh, I respect Dr. Alvarez very much. He is a very intelligent man. In his own way, I think, he tries to be reasonable. But he has very strong opinions, and I think it is his arrogance --

MR. ROBB: His what?

THE WITNESS: His arrogance -- that bothers me most.

MR. GRAY: Do you question his veracity?

THE WITNESS: I would not question his veracity in the real sense. I believe that if he says something he believes it.

MR. GRAY: I guess that is a pretty good definition of veracity, isn't it?

THE WITNESS: Yes.

MR. GRAY: Do you question Mr. Griggs' veracity?

THE WITNESS: Yes, I would.

MR. GRAY: You do question his veracity. Are any of the differences you may have with Dr. Alvarez in any way related to Dr. Oppenheimer?

THE WITNESS: No.

MR. GRAY: That would not be involved at all. Let me explain to you why I ask the question. You have testified

that you thought that Mr. Griggs felt strongly about the summer study because of the possibility of Dr. Oppenheimer's association with it. I believe therefore that your testimony brings the Griggs-Oppenheimer relationship squarely into this proceeding, or at least Griggs' attitude towards Dr. Oppenheimer. I am trying to find out whether, since Dr. Alvarez has come into this, whether that is at all involved in your difficulties with Dr. Alvarez.

THE WITNESS: I have no direct knowledge of what Dr. Alvarez thinks about things specifically germane to the hearing of Dr. Oppenheimer. I think the differences between me and Alvarez are matters of taste and subtle things of that sort. In some cases matters of substance. Dr. Alvarez participated in the Hartwell Project, the anti-submarine study study that I directed. He picked on a particular part of anti-submarine warfare that he thought should be pushed very hard. Very few of the other members of the Hartwell group agreed with him. I did not agree with him, but this was not anything but a difference of opinion on a technical matter.

MR. GRAY: That is not related in any way to this hearing.

THE WITNESS: It is not related to this at all.

MR. GRAY: Dr. Evans.

DR. EVANS: You know Dr. Teller quite well?

THE WITNESS: I don't know him very well; I know him.

DR. EVANS: Do you rather like him or don't you, or can't you answer that?

THE WITNESS: That is hard to answer. I don't know how to answer that question, sir. I would think hard to try to do it, if you press me.

DR. EVANS: I won't press you.

MR. GRAY: Perhaps this might not be difficult. Do you consider Dr. Teller a difficult man to work with? Have you ever worked with him?

THE WITNESS: I have never worked with Dr. Teller.

MR. MARKS: No further questions.

MR. ROBB: Nothing further.

MR. GRAY: Thank you very much.

(Witness excused.)

MR. GRAY: I want to get on the record a couple of things. I think we have had so much discussion about the Fortune Magazine article that that should go in as an exhibit because parts of it have been read into the record, and it has been referred to a good deal. I assume nobody objects to that?

MR. GARRISON: My problem about that is, Mr. Chairman, that if that goes in, it seems to me we ought to have a chance to answer it. I just think it is going to prolong the record. I am perfectly content with what was read into the record out of it. I don't ask that the rest of it be put in. If it does, it contains various veiled allegations that

I just think ought not to stand in the record without some answer to them. I have not myself read it. I have only got a sense of what it is like,.

MR. GRAY: I think I would say, Mr. Garrison that I don't think it is in any way prejudicial to Dr. Oppenheimer to have this as an exhibit. I am a little uncomfortable about having so many references to the article.

MR. GARRISON: All right.

MR. GRAY: I say to you I don't think you need to make any more answer than you have made or are making.

MR. GARRISON: It may very well not be worthy of any answer. I haven't read it.

(THE DOCUMENT WAS RECEIVED AS EXHIBIT NO. 2.)

MR. GRAY: Yesterday you asked me about further procedure, particularly with respect to what the Board would like to have in the way of proposed findings of fact and briefs. I have read the procedure under which we operate, and they are solid with respect to that matter, as far as the Board is concerned. There is some reference to briefs in the event of an appeal to the standing board of the Commission, the Personnel Security Review Board. So I take it there are no requirements in this matter under the procedures. If you wish to present to the Board proposed findings of fact, of course we would certainly consider them. If you wish to present briefs, of course we would consider them. In that

event if you do wish to file documents of this sort, the Board requests that they be filed with the Board no later than May 17, which is two weeks from yesterday. I am not sure whether that answers the question that you raised yesterday or not.

MR. GARRISON: What day of the week is that?

MR. GRAY: That is Monday.

MR. GARRISON: Mr. Chairman, we will do our best. It is a very tight time schedule, but we will do our best. If there is any possible give on that at all, it would be helpful.

MR. GRAY: I am authorized to say that this matter has been discussed with the other Board members, and the Board feels that this is a date we will request you to observe.

MR. GARRISON: All right. Among our problems is that of transcripts which is a perennial one with us. We can't take them out of the building here except a certain number that have been released. It is fearfully difficult for us to work here out of our offices. I suppose in due course we will get them, but there are these problems.

MR. GRAY: In recognition of this difficulty, I can only ask Mr. Rolander and his associates to do the best, with all their problems they have, that they can.

MR. ROBB: Mr. Chairman, I might say just for the record that I think it should be said that we have made available to Mr. Garrison and his associates a room here

with a table in it which they have been using as their office in this building.

MR. GARRISON: I appreciate that.

MR. ROBB: We have done our best for them.

MR. GARRISON: I am not raising any question of the courtesy that has been provided, but of the problem of working away from one's headquarters.

Mr. Chairman, did you have any further thought about a hearing of argument and summation by counsel?

MR. GRAY: I have assumed that you would wish to present a summation to the Board. I would assume that it would contain some argument.

MR. GARRISON: As far as I can put into it.

MR. GRAY: Yes. I want to have that before we adjourn or recess this series of daily meetings, as it were. We are ready for that when you have finished with your rebuttal witnesses.

MR. GARRISON: You mean this afternoon?

MR. GRAY: I would hope we could get started this afternoon.

MR. GARRISON: I just can't, Mr. Chairman. It is just physically not possible to do it.

MR. GRAY: May I ask how many more witnesses you will put on rebuttal.

MR. GARRISON: Mr. Hill and Dr. Oppenheimer. I

imagine it will take the afternoon, the way we go.

MR. GRAY: We then will ask you to start your summation and argument with the morning session tomorrow.

MR. GARRISON: Would it be possible to do it at the afternoon session, and have the morning free to do a little work? Mr. Chairman, I don't -- well, I won't sketch to you our problems, but it has been a matter of night work every night for the last three and a half weeks, apart from the transcripts. I have been with my client, my colleagues and the witnesses, the transcripts have been down here, and I have not even quite finished reading a summary of them prepared by Mr. Ecker, let alone reading the transcripts themselves. I am just so hard pressed to try to gather anything together that would be of use to the Board, if I could at least have a half day clear in which to do a little work, it would be a great help. I think in the end to the Board also.

MR. GRAY: I will discuss this with the Board during the noon recess.

MR. GARRISON: I would prefer a whole day if it could be had, but I would greatly prefer to do it on Thursday if it could be done.

DR. EVANS: May I just say --

MR. GARRISON: If you are going to be here.

DR. EVANS: I know just how you are pressed for time, Mr. Garrison, but you must remember that some of us --

MR. GARRISON: I know that, Dr. Evans; indeed I do.

DR. EVANS: We are in pretty bad shape, too.

MR. GARRISON: I know you are. I should say one thing, Mr. Chairman, if you don't mind. At Mr. Baruch's request, Dr. Oppenheimer saw him on Sunday -- Mr. Bernard Baruch -- and as a result of that conversation, Mr. Baruch said that he would be glad to have me get in touch with him with respect to testifying here. I did as soon as I could reach him. He said -- this was last night that I reached him -- that the earliest that he can come would be Thursday morning. He could come down on the 10:15 plane and testify. I told him I didn't know whether this would be possible, because of the probable close of testimony today, but I would mention the matter to the Board, which I do now.

MR. GRAY: We should be glad to receive a written statement from Mr. Baruch.

MR. GARRISON: Thank you, Mr. Chairman.

MR. GRAY: Can we start at 2:15.

(Thereupon at 2:40 p.m., a recess was taken until 2:15 p.m., the same day.)

AFTERNOON SESSION

2:15 P.M.

MR. GRAY: Would you be good enough to stand.

Give your full name.

DR. HILL: Albert Gordon Hill.

MR. GRAY: Albert Gordon Hill, do you swear the testimony you are to give the Board shall be the truth, the whole truth, and nothing but the truth, so help you God?

DR. HILL: I do.

Whereupon

ALBERT GORDON HILL

was called as a witness, and having been first duly sworn, was examined and testified as follows:

MR. GRAY: Would you be seated, please.

It is my duty, Dr. Hill, to remind you of the existence of the so-called perjury statutes. I should be glad to review their general provisions with you if it is necessary. I won't do so if you are familiar with them.

THE WITNESS: I think I know them generally well.

MR. GRAY: It is not clear to me, Mr. Hill, whether it is likely that you might get into a discussion of restricted data, but in any event, I should like to request that if in the course of your testimony you find it necessary to disclose classified material, that you notify me in advance so that we may take the necessary steps in the interest of security.

Finally, I should like to say to you that we consider this proceeding a confidential matter between the Atomic Energy Commission and its officials on the one hand, and Dr. Oppenheimer, his representatives and witnesses on the other. The Commission is making no releases about these proceedings, and on behalf of the Board I express the hope that witnesses will take the same view.

THE WITNESS: Yes, sir.

MR. GRAY: Mr. Marks.

DIRECT EXAMINATION

BY MR. MARKS:

Q Dr. Hill, what is your present occupation and position

A I am a professor of physics at MIT, and also Director of the Lincoln Laboratory.

Q How long have you been connected with the faculty at MIT?

A I think 17 years, except for a brief six months period before the war.

Q Without going into detail, what war work did you do?

A I was at the Radiation Laboratory during the entire war.

Q The Radiation Laboratory where?

A MIT.

Q Turning now to more recent days, how long have you had a connection with the Lincoln Laboratory?

A Since its inception. It was preceded by a Project Charles which began January of 1951. This terminated in the summer and sort of grew into Lincoln. The exact genesis and birthday of Lincoln would be hard to give. Somewhere before September 1, 1951.

Q What positions have you held in connection with the Lincoln Laboratory?

A I was Assistant Director, I guess, when it started, became Deputy Director in the spring of 1952, and Director on July 1, 1952.

Q Became director when?

A July 1, 1952.

Q In your capacity, as you have described it, in connection with the Lincoln Laboratory, did you have anything to do with the inception of the so-called summer study?

A Yes, quite a bit. I should say the inception took place likely before I became Director. It began in the last week in June. I should say that the former Director, Dr. Loomis, of the University of Illinois, resigned effective July 1st. This was done on March 1st, and I was then appointed Deputy Director and Director-Elect, if you like. Loomis continued to run the laboratory, but we had a rather firm agreement that things that were going to extend beyond July 1st I would take responsibility for them. So although the inception of the summer study took place while I was not

Director, I was completely responsible for it as the senior Lincoln person.

Q What can you tell us about the circumstances of the origination of the summer study?

A There are probably three fold. A number of us have always worried a bit about how to improve continental defense and the like. I should perhaps parenthetically say that the Lincoln Laboratory is devoted primarily to continental defense and air defense in general.

During the late winter and spring of 1952, Lloyd Berkner, who was then the Director -- I am sorry -- who was President of Associated Universities and very active in the East River project, which they ran, this was a study on civil defense, early concluded that civil defense would be very difficult, if not impossible, without some measure of early warning. Lloyd used to come periodically to see a number of us at MIT, at Lincoln, talking about the possibility of early warning. We invented various things on the cuff, found most of them wanting, and it was my feeling that a rather serious study of early warning, whether it was possible or not, should take place.

That was one genesis. Another genesis came from Zacharias talking I believe first with Charlie Lauritsen on the broad question of whether air defense is possible. Zach and I talked over the summer study one night at his house.

There may or may not have been others present. I don't know. We agreed it was a good idea. I said I would only go along with it if he would be the head of the summer study which he agreed to. I also insisted that early warning be looked at. He was quite in favor of that.

Q I meant to ask you to state at the outset, Dr. Hill, whether I asked you when you arrived this morning to look at the transcript of testimony in these proceedings given by Mr. David Griggs.

A I did look at it, not all of it. I looked mostly at the part that pertained to Lincoln or the summer study.

Q You have spoken of your interest in the problem of early warning. Did the summer study have any other specific purposes?

A Oh, yes. At one point I believe we stated the purpose was to look at air defense in the era 1954 to 1960.

Q What did that mean?

A That was the general purpose. It was to try to see what technological and military actions could be taken to face the threat of 1954 to 1960. We felt that the Charles study, of which I was a member, looked more at the immediate things and at only a part of the problem in this time period.

I should like to add one thing. Before coming down I thought I was going to be asked to testify only as to the origin of this word "ZORC", and I did refresh my memory on that

point. I have not refreshed my memory by referring to files or anything on these general questions about the summer study. I may have to hesitate at points and say I would like to refresh my memory, if that is all right with the committee.

Q Since you have mentioned "ZORC", what is your memory about that?

A All the soul and memory searching I can do, I first saw it in an issue of Fortune that came out just about a year ago. I think it was the May 1953 issue of Fortune.

Q Do you remember a meeting of the Scientific Advisory Committee in Boston in the fall of 1952?

A If I may correct you, Scientific Advisory Board of the Air Force. Yes, I did.

Q Did you attend?

A The session, as I recall, was three days. I was not a member of the Board, but we were asked to make a presentation from the Lincoln Laboratory.

Q When you say "we", who do you mean?

A Well, I was. The presentation occupied about half of one morning's session. I attended certainly all of the Lincoln presentation and most of what came before. I cannot swear I was there all the time before we went on. But I rather chairmanned our presentation which was made by five or six people.

Q Did Dr. Zacharias have anything to do with that

presentation.

A Yes. He had the final presentation on the results of the summer study. I believe he spoke for 30 or 40 minutes.

Q Do you recall any incident occurring during the occasion that you just described of the meeting of the Scientific Advisory Board in which the word "ZORC" or anything like that figured?

A I cannot recall any such thing. The statement was made in Griggs' testimony that Zacharias wrote this on the blackboard. I cannot believe that, because it would have been a cute trick in a very public and formal meeting, and I know Zacharias well enough to know that I would have been quite angry with him had he done it. I am convinced he did not do it. To the best of my knowledge, as I say, I never saw or heard the word before the Fortune article of last May.

Q Returning to the inception of the so-called summer study, do you have any recollection of any part that Dr. Oppenheimer played in that?

A I believe that Zacharias and I approached Charlie Lauritsen, Robert Oppenheimer, and I. I. Rabi, and talked to them about it to get their opinion.

Q When would that have been?

A That would have been around the time of the Physical Society meeting in 1952. I think it was that period. That is the first week in May and the last week in April.

We discussed it at some length with Robert then.

Q Discussed at some length with whom?

A With Dr. Oppenheimer.

MR. ROBB: He said Robert.

MR. MARKS: I just didn't understand him, Mr. Robb.

BY MR. MARKS:

Q Do you remember anything of the views that were expressed at that time about the purposes that should or might be served by the summer study that you were then --

A I think in general this group agreed with Zacharias and I think a study would be a worthwhile thing. We talked some about the problems that might be looked at, such as early warning and defense against intercontinental ballistic missiles -- giant rockets -- things of this sort, and I think it was the general opinion of the three gentlemen that Zacharias and I approached that they would support this by joining to the extent that their time permitted, and would help us in any way on call.

Q Was there any discussion then or at any other time about the relation between the summer study and the problems of the Strategic Air Command?

A I don't specifically recall in that period that there was such discussion. I can recall other discussions with this group and others, like Dr. Piore of the Navy and Dr. Haworth of Brookhaven and Berkner, whom I have already

mentioned, of general discussion of offense and defense, and so on. In all these discussions I believe the only positive statement made about the Strategic Air Command was that it should be strengthened.

Having seen Griggs' testimony, I should add that there is some inference somewhere in it that increasing defense might weaken Strategic Air Command, and hence increasing defense is bad, or that some scientists definitely were against the Strategic Air Command, and thought it should be cut or abolished. I have never heard any such statement in my discussion with scientists cleared for military work. As I say, the only thing I can recall in this sense is that in general we thought it should be strengthened.

We also thought air defense should be strengthened.

Dr. Hill, I would like to read you a portion of the testimony given by Mr. Griggs, and I will then ask you a question about it. I am reading from page 2617 of the transcript, and the passage that I intend to read runs from page 2617 to page 2620.

"And did the Lincoln Study" (I am reading just a little after the middle of page 2617).

MR. ROBB: This is a question by who, Mr. Marks?

MR. MARKS: This is a question on cross examination of Mr. Griggs. I believe Mr. Silverman conducted it.

"And did the Lincoln Study ever recommend the

giving up of any part of our strategic air power?

"A. No, not to my knowledge.

"Q. I think you have already said so far as your knowledge goes, Dr. Oppenheimer did not recommend that.

"A. That is right. I would like to amplify my answer on that for the benefit of the Board, since this is the first mention of the summer study in this much detail.

"We were concerned by the thing I have already mentioned, that is, the fear that the summer study might get into these things which we regarded as inappropriate for Lincoln, and as of questionable value to the Air Force -- I refer to the giving up of our strategic air arm, and the allocation of budget between the Strategic Air Command and the Air Defense Command -- but we were also very much concerned in the early days of the formation of the Lincoln summer study, because it was being done in such a way that had it been allowed to go in the direction in which it was initially going, every indication was that it would have wrecked the effectiveness of the Lincoln Laboratory. This was because of the way the thing was, the summer study was being handled administratively.

"So far as I know, it was not because of any direct action on the part of Dr. Oppenheimer. On the other hand, I felt at the time that Dr. Oppenheimer should have been well enough informed and alert enough to see that this would

be disastrous to the Lincoln summer study.

"After having reported this to the Secretary of the Air Force, Mr. Finletter, who had been actively concerned with the summer study, and had been very much -- excuse me, I made a mistake -- I said Mr. Finletter had been actively concerned with the summer study. I meant to say he had been concerned with Project Lincoln. He had been in touch with President Killian, and Provost Stratton of MIT on the prosecution of Project Lincoln. So I reported this to Mr. Finletter, and he essentially charged me with trying to find out if the summer study was going to be conducted in such a way as to result in a net gain to the effectiveness of Lincoln or a net loss.

"If it looked to me as though it were going to be a net loss, I was asked to inform him so that steps could be taken to correct this condition, or to cancel the summer study if that were necessary.

"I got in touch with Provost Stratton at MIT. I found that he hardly knew about the existence of the plan for the summer study. He undertook to look into it. I told him the things that worried me and worried Mr. Finletter about it. He did look into it. Some corrective action was taken in terms of discussions with people most involved and in terms of changing the organizational structure by which the summer study was to be introduced into the Lincoln project, and at

a slightly later date Mr. Killian of MIT called me and told me that he was satisfied partly as a result of the recent activities that he and Dr. Stratton had been engaged in, which I have already mentioned, that the Lincoln summer study would operate to the benefit both of Lincoln and the interests of the Air Force.

He further said, since I had mentioned that one of the things we were afraid of was that the Lincoln summer study results might get out of hand, from our standpoint, in the sense that they might be reported directly to higher authority, such as the National Security Council, President Killian reassured me that he had taken steps so that he was sure that the summer study would be -- I think his words were "kept in bounds' "

MR. ROBB: I think you ought to read the next paragraph.

MR. MARKS: I would be glad to.

"On the basis of this assurance we had no further -- that is, Mr. Finletter, myself and General Yates and the other Air Force people -- had no further immediate worries about the summer study and we encouraged it."

BY MR. MARKS:

Q I would like to ask you generally, Dr. Hill, whether you have any comment to make in respect to the passages that I have read to you?

A In the first place, I should just like to comment on Griggs' ideas of what he thought the summer study was going to be. He evidently was concerned that the purpose would come out with some super master plan -- I mean the purpose was to come out with a master plan -- of how to divide money between Strategic Air Command and Air Defense Command. Such was farthest from our thoughts. We at no time, to the best of my knowledge, considered worrying about the problems of Strategic Air Command any way except in so far as they relate to defense and defense relates to them.

I don't know where Griggs got this idea, and I don't doubt that he had because I know for a while he was quite concerned about this summer study, and about allowing it to be set up. I know this only by hearsay. He never came to me with his qualms. He did talk to a lot of other people. He discouraged some people from participating, so I have been told, and he evidently talked to my superiors at MIT.

The inference is made -- I can't quarrel with what Griggs thought -- the inference is made that he somehow by this maneuvering changed our purpose. This I deny.

Q Did you talk to your superiors at MIT about this project?

A Yes. In setting up this we first talked to our superiors at MIT and very briefly with the Air Force and there seemed to be good support for it. Then I know that this

occurred during the Physical Society meetings. Several people came to me and said they were quite concerned about setting us up. One, that it might wreck the program already going on in a growing laboratory, and secondly, they were concerned about Dr. Oppenheimer's participation in it for security reasons.

I said it was my practice to leave security matters entirely to those people charged with them; that we would put Dr. Oppenheimer's name in for clearance just as we would anyone else. This created enough of a stir so that Zacharias and I went back to Killian and Stratton, our own superiors, told them about it, and it was then agreed rather than going ahead immediately -- I had already prepared letters to send out to people whom we hoped would participate -- instead of that, to make sure at the highest levels that we should talk to in the Air Force, Army and Navy, that we make certain this was all right.

Zach and I spent several weeks seeing all the proper people, and I know the persons I talked to, the senior ones: Admiral Bolster, and his associates in the Navy; General Mariš in the Army, and first General Putt in the Air Force, and later General Craigie, all of whom expressed a certain amount of concern and a certain amount of enthusiasm, and the net result was that they all agreed we should go ahead.

So instead of starting our recruiting procedure, shall

I say, May 1st, we started about May 20. So that there was a delay while we reexamined these fears that Griggs and others had raised.

Had I answered the question? It was rather lengthy if you consider the background, and I may have left something out there.

Q I would like to direct your attention specifically to one matter that was referred to in the passage that I read. In the passage I read to you there occurred at one point the following: This was in one of Mr. Griggs' answers, and I am starting in the middle of the answer on page 2618:

". . .we were also very much concerned in the early days of the formation of the Lincoln summer study, because it was being done in such a way that had it been allowed to go in the direction in which it was initially going, every indication was that it would have wrecked the effectiveness of the Lincoln Laboratory. This was because of the way the thing was, the summer study was being handled administratively.

"So far as I know, it was not because of any direct action on the part of Dr. Oppenheimer. On the other hand, I felt at the time that Dr. Oppenheimer should have been well enough informed and alert enough to see that this would be disastrous to the Lincoln summer study."

Have you anything to add to what you have already testified that would explain the reference in the passage that

I have just read about how things were being handled administratively?

A I make no claim to knowing all about administrative procedures. It seems to me there are two ways to wreck a laboratory. One is to ruin the morale on the inside, and the other is to ruin the confidence of those on the outside who must support it.

With regard to the former, although Griggs doesn't say so specifically, I think this has to be brought in. Some people were concerned that bringing in a group of some rather high powered physicists and others, and putting them down in the middle of an organization might be so glamorous that people would neglect their work and so on.

It was my feeling that the ability to bring in outside people of stature in this field was very valuable and rather than hurt morale, would rather help it. I think events have proved me right on this. The amount of time that any members of the laboratory took off or neglected their work because of the presence of this group was completely negligible.

As far as destroying confidence on the outside is concerned, first of all, of course, I must have the confidence of my superiors, and this was carefully cleared with them before any move was made to solicit any help. We had talked to other people and we received advice, but to solicit any help from the outside, not a thing was turned until Zacharias

and I felt we had the complete confidence of Killian and Stratton. They in turn said you must get the Air Force, who is the contractor, and the primary support behind you, too.

It was my feeling -- here I will have to refresh my memory from the files, gentlemen -- that I would naturally have gone to General Putt in this instance, since he is the Chairman of our Military Advisory Committee. I know I went to someone, I believe it was Putt. We discussed the pattern, thought it a good idea.

So this business about administrative procedures, I don't understand. I point out that Griggs was not around the laboratory at any time. He could know nothing of these directly. He never consulted me or asked what we were doing. So I can only tell you what we did. I must leave to your judgment whether it was good administrative policy or not.

After the fuss was made by Griggs around the first of May, then things got in an uproar, and I was called in by Killian and Stratton as you might expect, and we went through it again. Then we had this other go-around which I explained earlier, seeing all the services and seeing them in detail. They bought it.

Q They bought it?

A That is what I said. Maybe I better put it in good English. They agreed that what we were planning to do was quite all right, and probably a good thing, and if we wanted

to do it, we should be supported.

At no time, I reiterate, did we change what we had started out to accomplish.

MR. MARKS: I have no further questions.

MR. GRAY: Mr. Robb.

CROSS EXAMINATION

BY MR. ROBB:

Q Doctor, you told us about going to see the various representatives of the services, General Putt, and others, and you said they expressed a certain amount of concern, and a certain amount of enthusiasm. Could you explain that a little bit to us?

A Let me point out, I believe that Vista was just reporting then. This had created a certain amount of stir in the military. They were afraid, as I recall, that Vista would carry too much weight with higher authorities that did not understand their problems, and would hurt their program. They were afraid, and they expressed some concern, if we started a program of this sort, to take a general look at a broad military problem, that this in turn might give them a headache rather than do good. I think events have proved that this concern was all right, but there was no undue problem that resulted from it.

Q You felt, of course, that the Air Force being the contractor who was going to pay for this had a perfect right

to be concerned about it?

A Oh, yes, sir.

MR. ROBB: That is all. Thank you.

MR. GRAY: Dr. Hill, have you read Dr. Zacharias' testimony here before this Board?

THE WITNESS: The testimony that was given last week I skimmed through quickly, yes, sir. I did not discuss with him what he talked about this morning.

MR. GRAY: How much other testimony have you read besides Griggs' and Zacharias'?

THE WITNESS: I confess to glimpsing at some of the others while I was sitting out in the room, the others that were in those two volumes. I can't say that I read any of the testimony so as to remember it. I sort of skimmed a page and read a paragraph.

MR. GRAY: With respect to "ZORC", you said you were confident that Dr. Zacharias would not use this phrase or go through this procedure which Mr. Griggs testified about. Am I correct in my recollection?

THE WITNESS: That is correct. I am also confident, if I may add, that had he done it, I would have been quite annoyed, and would have left him know it. Had I seen him do this, I am sure I would have remembered. That is the point I was trying to make.

MR. GRAY: If he did it today, would you be annoyed

with him?

THE WITNESS: I think that would depend entirely on the circumstances, sir.

MR. GRAY: Is this a matter of time? I think we ought to tell you that he testified today that he might do it today.

THE WITNESS: I don't know. If he were in a group with friends, and they were talking about things like that Fortune article, and he happened to write "ZORC" on the blackboard, I would not be surprised. If he did it at a formal meeting, I would be quite surprised.

MR. GRAY: I see. You said in your direct testimony that you never heard any scientist who was cleared for military work argue for the dissolution of the strategic arm. Have you heard any scientist argue for the dissolution of the strategic arm?

THE WITNESS: No, sir.

MR. GRAY: So the "cleared for military work" had no significance?

THE WITNESS: No, sir.

MR. GRAY: You said that Dr. Griggs had discouraged people from working on the summer study, so you had been told. Who told you that?

THE WITNESS: Dr. Getting -- I tried to say that this was inferred, and also second hand -- Dr. Getting, for

instance, had seemed quite enthusiastic about working on this summer study. I know he talked to Griggs at length and after that he cooled off completely.

MR. GRAY: And you would draw the conclusion from that that it was as a result of talking with Griggs --

THE WITNESS: I infer that, yes, sir.

MR. GRAY: Who told you that he had kept people from working on the project?

THE WITNESS: Well, this was the inference of other people, too. I cannot testify that this actually happened. It was inferred by other people. I think Zacharias would say this.

MR. GRAY: Did Zacharias tell you this? Was he the source of your information?

THE WITNESS: I think he did.

MR. GRAY: Did anybody else tell you that Griggs had been instrumental in persuading people not to work on this project?

THE WITNESS: No, but I know one of my colleagues was very bitter about it, and very much set against starting it.

DE. EVANS: Set against what?

THE WITNESS: Set against starting the project. I also know this was shortly after a talk with Griggs. Again this is only inference.

MR. GRAY: Do you think it is fair to draw such an

inference and to conclude from that that he was responsible for people not working on the project?

THE WITNESS: No, sir , it is not.

MR. GRAY: You have me confused now. Do you wish to have it appear that you testified here that Griggs was responsible for people not working on this project?

THE WITNESS: If I can state it now, I would like to.

MR. GRAY: I wish you would. I am not trying to trap you, Dr. Hill.

THE WITNESS: I understand that perfectly. In trying to talk around Griggs' testimony which was rather general in spots, I had to give some flavor of my feeling of his activities at that time, too. I tried to make clear that Griggs never talked to me about his concern, and that I never talked to him about my concern about his activities. Therefore, I think it only fair that I drew certain inferences just as he did. I think it would be strictly unfair on my part to accuse him of having dissuaded people from taking part in the study.

MR. GRAY: If you had come here without knowing what Dr. Zacharias had testified to this Board, would you have stated that Griggs had been instrumental, so you had been told, in keeping people from working on this project?

THE WITNESS: Sir, about Zacharias' testimony, I skimmed through his earlier testimony of a week ago, and I don't recall

from it any mention of Griggs. My statements about Griggs have been drawn from Griggs' testimony and my own memory. As I say, I did not talk to Zacharias about his testimony this morning.

MR. GRAY: Did you talk with Dr. Oppenheimer's attorneys about Dr. Zacharias' testimony this morning?

THE WITNESS: No, sir. I have not talked to anybody about it. Both Zacharias and I talked with Mr. Marks very briefly this morning about the flavor of what might go on.

MR. GRAY: Was there any mention made of persuading people not to work on this project?

THE WITNESS: I can't recall.

MR. GRAY: This conversation took place this morning and you can't recall?

THE WITNESS: Yes, sir. You will recall you asked me a question about Zacharias' testimony and inferences I drew from it. There may have been discussion this morning about Griggs, but if there was, I brought it up from having read Griggs' testimony.

MR. GRAY: It is not a question of who brought it up. I am asking you whether in your preparation for this appearance there was any discussion of Griggs having been instrumental in persuading people not to work on this project.

THE WITNESS: Yes, there was.

MR. GRAY: And so, therefore, you are unable to

tell me who told you other than that conversation in preparation for this that Griggs had been instrumental in persuading people not to work on this project?

THE WITNESS: No. Dr. Getting gave me this impression and Dr. Zacharias gave it to me two years ago at the time we were setting it up. There we had long conversations on the subject.

MR. GRAY: Dr. Hill, you testified on direct examination that at a meeting several persons came to you and expressed concern about the project, at least partially on the score of Dr. Oppenheimer's security status. Do you remember who some of these people were?

THE WITNESS: If I said several, I was wrong; only one, and that was Dr. Getting.

MR. GRAY: You did say several.

THE WITNESS: I am sorry, then. That was a slip of the tongue.

MR. GRAY: What was Dr. Getting's oppositional position?

THE WITNESS: He is now vice president of the Raytheon Manufacturing Company.

MR. GRAY: But he was then in the Navy?

THE WITNESS: No, he was then at that job, but the year previous he had worked on a staff job in the Air Force.

MR. GRAY: And he was the only one that mentioned

concern about Dr. Oppenheimer's security?

THE WITNESS: Yes, sir. Quite a few others mentioned that Griggs was talking about and had talked to them.

MR. GRAY: Do you remember who they were?

THE WITNESS: I know of one. Dr. Fisk of Bell Laboratories.

MR. GRAY: Was he concerned?

THE WITNESS: He was not concerned about Dr. Oppenheimer. He was very much concerned about Griggs making this sort of statement.

MR. GRAY: He rejected the notion that there was any question?

THE WITNESS: Yes, sir.

MR. GRAY: I think I should tell you, Dr. Hill, that I am very much concerned, as are my colleagues on the Board, about the fact that there is testimony before this Board which indicates very clearly that some one or more witnesses have not told the truth to this Board. There has now developed in this proceeding a real question in some cases of veracity.

I have another question which is not related to the remark which I made in any way.

THE WITNESS: May I ask you a question, sir?

MR. GRAY: Yes, sir.

THE WITNESS: Were you referring to the "ZORC"

incident?

MR. GRAY: Among others, yes. Do you have anything to add about the "ZORC" incident?

THE WITNESS: No, sir.

MR. GRAY: Was Griggs the only person who was responsible for the delay in the beginning of the summer study?

THE WITNESS: That is a very difficult question to answer.

MR. GRAY: Let me remind you that you testified on direct examination that there was a delay of several weeks as a result of the activities -- this may not be your words -- but as a result of the activities of Griggs and others. If you are uncomfortable about my statement of your testimony, I will be glad to have it read back to you.

THE WITNESS: No, I would be very happy to clear this up.

MR. GRAY: Yes.

THE WITNESS: I said that a stir took place around the first of May which resulted in a delay.

MR. GRAY: Yes.

THE WITNESS: I later, I think, said I thought that Griggs was in part responsible for that stir. I don't know of others.

MR. GRAY: So you think Griggs was probably the one responsible.

THE WITNESS: As much as anyone. The one I know anything about. I have no way of knowing that there were others.

MR. GRAY: Would you characterize Griggs' activities in this episode as sabotage?

THE WITNESS: No, sir.

MR. GRAY: What would you call it?

THE WITNESS: I would call it difference of opinion.

MR. GRAY: Would you call it honest difference of opinion?

THE WITNESS: I would think so. I would think also, however, that a good deal of misinformation about what we were trying to do, if this present testimony reflects what he thought then.

MR. GRAY: You didn't question his right as a senior scientist of the Air Force to have an opinion about the shape and form of the study?

THE WITNESS: Not at all, no, sir.

MR. GRAY: Now, after Dr. Killian and Dr. Stratton called you, and perhaps others, in, following the "stir", and you were authorized to go ahead, I believe you said, was there any change whatsoever in the plan of the study?

THE WITNESS: No, sir.

MR. GRAY: Not the slightest change?

THE WITNESS: No, sir.

MR. GRAY: So therefore your interpretation of the situation was that there had simply been delay of several weeks without consequence otherwise?

THE WITNESS: That is correct.

MR. GRAY: Dr. Evans.

DR. EVANS: Dr. Hill, would you tell us something about your education, where you were educated?

THE WITNESS: Yes, sir. I attended Washington University in St. Louis from 1926 to 1930, receiving a bachelor's degree in mechanical engineering. After three years working, I came back and took a master's degree in physics, and then went to the University of Rochester and finished a Ph. D. in 1937 in physics.

DR. EVANS: From what I heard here -- I am just trying to get my thinking cleared up -- there seems to have been two schools of thought engaged in this work, and there doesn't seem to be much love lost between them, is that true?

THE WITNESS: I have heard this, sir. I don't consider myself a member of any school of thought. I have heard that there is quite a difference of opinion among certain groups of physicists.

DR. EVANS: You would say that if there were two schools of thought, you would say you belong to Dr. Oppenheimer's school, is that it?

THE WITNESS: I think I would have to have the

definition of the school of thought. If you mean about the H bomb --

DR. EVANS: No, I mean about this laboratory we are talking about -- this summer course, I beg your pardon.

THE WITNESS: Summer study.

DR. EVANS: Yes, the summer study.

THE WITNESS: There I certainly can identify myself with a school, and that was that it was a very good thing and needed doing. If Dr. Oppenheimer belongs to that school, then we are joint members.

DR. EVANS: Would you care to name some of the men besides Griggs that belonged to the other school?

THE WITNESS: If you mean now, people who questioned the wisdom of the summer study in the scientific field?

DR. EVANS: Yes.

THE WITNESS: The three I can think of most quickly are Griggs, Getting and Valley.

DR. EVANS: Where did Alvarez fit in this?

THE WITNESS: I don't recall ever talking to him about it.

DR. EVANS: You don't know anything about Teller?

THE WITNESS: No, sir. He would not -- in general the people we would have talked to about this would have been those more closely associated with electronics than with nuclear weapons. There are some exceptions. So Teller never entered

into our discussion to the best of our knowledge.

DR. EVANS: I have no other questions.

MR. GRAY: Mr. Marks.

REDIRECT EXAMINATION

BY MR. MARKS:

Q Dr. Hill, when you came from the train this morning to Mr. Garrison's office and met me, did I ask you any questions about whether Griggs had discouraged people from working on the summer study?

A I don't recall that you did.

MR. MARKS: I have no other questions.

MR. ROBB: I have no questions.

MR. GRAY: Is it your testimony, then, Dr. Hill, that you did not discuss with the attorneys this morning this question of discouraging people from working on the study?

THE WITNESS: Sir, I have already given you an answer to it.

MR. GRAY: I don't believe you have given me a clear answer.

THE WITNESS: I am trying to clear it up.

MR. GRAY: I would like to have you clear it up. That is my entire purpose.

THE WITNESS: I should really go back to make this completely clear two years, to this time when Zacharias and I were trying to set up this summer study. At that time we

felt rather clear that Griggs was quite opposed to it and doing what he could to put it in the best light for Griggs to see that it was in its proper perspective. In talking to each other we may have used other words. That brings us up to this morning, and I honestly felt I was here only to testify as to the "ZORC" incident. So I had not reviewed my memory at all, and I have been trying to all day, which is why I hesitate just a little about when who said what to whom. I know after reading Griggs' testimony, I made a statement that it looks to me like Dave was really in there pitching and trying his best to keep people from joining. I can't recall that Mr. Marks asked me a question. His question to me was did he ask the question, and I said no.

Now, then, Zacharias and I sat out in the waiting room together and we discussed it some more about Griggs and two years ago, you see. So my discussion on that subject with Zacharias and with Marks, I think, mostly my talking. I don't recall what Zacharias said except as a sort of nod agreement. Does that clarify my testimony on this point?

MR. GRAY: Let me answer your question this way. I am trying to clarify it.

On the direct question by Mr. Marks, you made the statement that Mr. Griggs had discouraged people from working on the project, so I have been told. I would be glad to have this read back to you if you wish.

MR. MARKS: Mr. Chairman, I don't think I asked him a question about that. I think that was a reference to the general question which I asked.

MR. GRAY: In his direct testimony he made this statement. I will ask the reporter to read the statement that has me concerned.

(The reporter thereupon read the record as follows:

"BY MR. MARKS:

"Q I would like to ask you generally, Dr. Hill, whether you have any comment to make in respect to the passages that I have read to you.

"A In the first place, I should just like to comment on Griggs' ideas of what he thought the summer study was going to be. He evidently was concerned that the purpose would come out with some super master plan -- I mean the purpose was to come out with a master plan -- of how to divide money between Strategic Air Command and Air Defense Command. Such was farthest from our thoughts. We at no time, to the best of my knowledge, considered worrying about the problems of Strategic Air Command any way except in so far as they relate to defense and defense relates to them.

"I don't know where Griggs got this idea, and I don't doubt that he had because I know for a while he was quite concerned about this summer study, and about allowing it to be set up. I know this only by hearsay. He never came to me

with his qualms. He did talk to a lot of other people. He discouraged some people from participating, so I have been told, and he evidently talked to my superiors at MIT.")

MR. GRAY: "He discouraged some people from participating, so I have been told."

THE WITNESS: Yes, sir. If I could retract my words, I would say that this way. Inferences have been made by me and others that he discouraged other people from working on it. When I say I have been told, I meant as of two years ago, and the thing I was trying to bring out was that this was completely inference on my part. Does that clear it up, sir?

MR. GRAY: I think so.

I should like to say for the record that if in my questioning of this witness I have seemed to impute to Dr. Oppenheimer's attorneys any impropriety, I have no such intention.

MR. MARKS: Thank you.

MR. GARRISON: Thank you.

MR. GRAY: I should say further that I understand that the witness did not discuss with Mr. Marks the question of discouragement of employment at the summer study although it is my understanding that this matter did come up in conversation with the witness with Dr. Zacharias

THE WITNESS: That is right.

MR. GRAY: Is that a correct statement?

THE WITNESS: That is correct.

MR. MARKS: I think I need to add to that, sir, that I believe some remark to that effect about discouraging people on the summer study was made in my presence when I first met with Dr. Zacharias and Dr. Hill this morning. I don't recall which of them made it. I didn't pay any attention to it.

MR. GRAY: Do you have any further questions?

MR. MARKS: No, sir.

MR. ROBB: No, sir.

MR. GRAY: Thank you very much, Dr. Hill.

THE WITNESS: Thank you.

(Witness excuse.)

MR. GARRISON: Mr. Chairman, could we just talk about procedure for a minute?

MR. GRAY: Yes. I have talked with the members of the Board at the noon recess, and I may say I am authorized to say we will allow you to start your summation and argument tomorrow afternoon, rather than tomorrow morning, which I believe was your request.

MR. GARRISON: I appreciate that very much. May I then say that in the lunch hour which we did not spend with Dr. Zacharias and Dr. Hill, I reached the conclusion in my conscience as a lawyer that I just must finish the reading of the summary which I can do in a few hours before reaching a final decision as to whether to ask Dr. Oppenheimer to make a rebuttal or not. I am just not quite clear at this point

whether it is going to be necessary. If I could have some means of communicating with you and with the other Board members either late this afternoon or very early this evening as to whether or not I would like to put him on or ask him to resume testifying in the morning or not, I would like to leave it in that manner, if it is feasible for you. I realize the inconvenience that this may mean, but I should certainly arrive at the decision early enough this evening -- I should think by dinner time.

MR. GRAY: We will proceed tomorrow afternoon with your summary.

MR. GARRISON: Yes.

MR. GRAY: I think I can say on behalf of the Board that we will not insist that you tell us now that you will or will not call Dr. Oppenheimer back as a witness tomorrow morning. I would like to know as early as possible about that so that we may make our own plans.

MR. GARRISON: Thank you, Mr. Chairman

(Discussion off the record.)

MR. GRAY: You have presented your witnesses except for possibly Dr. Oppenheimer?

MR. GARRISON: Yes.

MR. GRAY: I take it, then, gentlemen, we are in recess until 9:30 tomorrow morning. If you decide in the meantime you will not call Dr. Oppenheimer to the stand, we

will meet at 2 o'clock tomorrow afternoon.

MR. GARRISON: Yes, sir.

(Thereupon at 3:35 p.m., a recess was taken until
Wednesday, May 5, 1954, at 9:30 a.m.)