

Reel 2-A, First Retype, October 19, 1965
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Question 11: Why VB took the CIW post;
Why VB did not want a university
presidency

Here we begin Reel 2 with Question 11. 1) WASHINGTON
How does one reconstruct motivations of many 2) CIW
years ago? It's impossible, of course. But 3) WAR CLOUDS
a few things come to mind. Over the few years
that I was Karl Compton's vice president at
MIT, I was approached two or three times,
at least, to see if I'd leave there to take
a college presidency. In addition, there
were indirect feelers from time to time. Well,
along about the first of 1938, we talked it
over at home and came to a definite conclusion:
we did not want to go where I'd be president
of some university. I knew a good deal about
the kind of life a university president lives,
and I could think of a lot of things I'd rather
do. So we said, to ourselves, let's settle this.
We wouldn't go into individual situations
and weigh them pro and con. We just said

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"Let's decide," which we did. So we bought a farm in New Hampshire on the assumption that we were going to dig in and be New Englanders for the rest of our lives.

But when the proposal from the Carnegie Institution of Washington came along, that was a very different thing. It looked as though, with a moderate amount of my direct effort at the Institution, I could move into quite a number of national affairs, with proper regard for the Institution's interests, of course, but things that would be interesting and worthwhile in themselves. In other words, I wouldn't be a slave as the president of a university usually is. Probably the best way to illustrate what I mean is to tell about a chat I had one time at the Carnegie Institute of Technology out in Pittsburgh. They got me to come out there to advise with them on getting a new president. I agreed only on the understanding that I was not myself a candidate. (I'm not dead sure that I've

- 1) WASHINGTON
- 2) CIW
- 3) UNIVERSITY OFFERS

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got this conversation in the right place. I had several conversations along these lines, one with John D. Rockefeller, Jr., in regard to the Rockefeller Foundation [X-REF FORWARD TO PAGE 614] and I had some interesting shows with Columbia. So I may have got it landed in the wrong place, but I'll see if I can't pin that down later.) (QUERY) In spite of the prior agreement, Church, then head of the Board of Trustees, persisted in implying that I was a candidate for the post. (SEE PAGE WHICH FOLLOWS FOR IDENTIFICATION OF CHURCH) The committee I met with was a group of Pittsburgh businessmen, mostly steelmakers, and I finally got annoyed and said that I wouldn't be found dead in their institution. I also told them that I was already head of an institute of learning which had no football team, no alumni, no student body and no celebrations (X-REF AHEAD TO PAGE 614) -- where the trustees met only once a year. I told them that when they could beat that I'd talk to them.

- 1) UNIVERSITY OFFERS
- 2) "NO ALUMNI" ETC.

Samuel H. Church was a Trustee of the Carnegie Institute; I believe he was originally named by Andrew Carnegie. The Institute was created and endowed in 1895, but was not incorporated until 12/22/26.

Now it was about 1937, '38 or '39 that Dr. Bush went to Pittsburgh to help Carnegie Tech select a new President. Dr. Robert E. Doherty became the President and remained in this capacity until his death in 1950.

For Church's vintage I would say he was a contemporary of Andrew Carnegie. The By-Laws read: "The title of this body, created by appointment of Andrew Carnegie, is the Board of Trustees of Carnegie Institute. It is composed of the following named persons, and their successors forever, namely:

Rev. Dr. W.J. Holland
John A. Brashear
Prof. Gustave Gutenberg
Rev. A.A. Lambing
D.T. Watson
John W. Beatty
Joseph R. Woodwell
A.S. Wall
Samuel H. Church

C.C. Mellor
John Caldwell
William McConway
C.L. Magee
Albert J. Barr
Josiah Cohen
E.M. Bigelow
Henry Phipps Jr.
T.M. Carnegie

1) SAMUEL CHURCH
(Carol Young's
notes)

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Whenever the conversation occurred, I remember the statement pretty well.

- 1) CIW
- 2) MOTIVES

The talks with Columbia had some interest but we may possibly get into that later.

(X-REF FORWARD TO PAGE 590) It was at the time just before Ike went there, and I consulted with Ike before he made the move.

I don't think there's any doubt that one of the things I had in mind in going down to Carnegie was that I was going to have a remarkable amount of freedom. So it turned out -- when there wasn't a war on. Now of course in the late 1930s there was the beginning of worry about war, but it's hard to tell how much of this was in my mind and how much may have influenced me in wanting to get near the seat of operations. Certainly as the war went along, a lot of men had that same thought very definitely. For example, Dick Tolman came from California Institute of Technology (X-REF FORWARD TO PAGE 366) and just

moved to Washington, where he'd be on hand to be of service in any way he could. In the spring of 1940, a number of us gathered and had all sorts of conversations. We were puzzling as to what we could do, and when we ought to try to do it. Whether that extended back to the time when I was thinking of moving to Washington is uncertain. It may have been an unconscious motive, but I don't think I ever discussed that aspect of things with anyone. Of course I was most reluctant to leave Karl Compton, under whom I'd served with the greatest joy, but I also knew that there were plenty of good men at MIT who could take over. Ed Moreland became Dean of Engineering and was an excellent man for the post. Jim Killian became Vice President, and one need merely look at the history to see how that worked out. As a matter of fact, I don't think Karl Compton knew Killian at all well. I urged on Karl that he study Killian because

- 1) CIW
- 2) MOTIVES
- 3) FLASHBACK - MIT
- 4) KILLIAN, ETC.

(ital)

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I thought he had some extraordinary qualifications. Moreover, there was a swing on the way in the attitude of MIT toward the Humanities, and I knew it wouldn't do any harm if a man who had strong interests in that direction should later on come in as president. As we know, Karl made Jim Killian his Vice President. When the war came and Karl was in Washington most of the time, Jim ran the Institute. In so doing, he completely won the confidence of faculty and trustees. He managed the Institute magnificently. So when Karl died, Jim was the obvious choice. He went on with this until he was called to Washington to serve Eisenhower as his scientific advisor. When he came back to MIT, it was as Chairman of the Board and Jay Stratton went in as President. (X-REF FORWARD TO PAGES 621, 622) This particular move was a bully one, because it saved both men for the Institute.

- 1) FLASHBACK - MIT
- 2) KILLIAN, ETC.

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We probably would have lost Stratton otherwise; he was much sought after. Moreover, it put Jim in the position which he could fill to such magnificent advantage: representing MIT on the outside, coordinating the actions of Trustees, and generally helping to move the Institution forward in the eyes of the public and of benefactors.

This certainly has worked. It came about, in detail, very simply. Compton had been both Chairman of the Board and President, and so had Killian. When Killian went to Washington, Stratton could act as President, but I became Chairman of the Board. This made it very simple indeed, for when Jim came back, I could step aside in his favor without any question. They made me Honorary Chairman of the Board, but this is a polite way of saying to a man, "Your active days are pretty nearly at an end, we like to be nice to you," and so forth.

1) MIT BACKTRACK
CONTINUED

Now seriously, I've been around the institution since as sort of an old patriarch, consulted when things are tight sometimes, but carrying no real responsibility. A very pleasant situation.

1) MIT BACKTRACK
CONTINUED

To finish the discussion, neither Karl nor I of course knew what was coming in 1938. I don't think I had in mind at all definitely the possibility of war, or the notion of getting into the middle of it. That is, I didn't until after I got to Washington and war was a lot closer; then I certainly did have the idea of getting into the middle of it.

Question 12: More about the Carnegie Institution of Washington

1) FORWARD AGAIN
2) CIW & CORP.

In commenting on Question 12, there isn't anything to say directly. I wrote sixteen Annual Reports for the CIW, and just about exhausted all I had to say there. Then, of course, I also served for some years on the board of the Carnegie Corporation which is the great fund-granting institution.

CIW does research -- that's its job and that's all it does. The Corporation, from headquarters in New York, gives away money, and that's all it does. I was never quite happy on the Corporation's board because I was never quite convinced that the fund-granting system was producing all the results it should. Of course, I was only one among many on the board. But also I was always suspect, in a way, because I was the only scientist around the place, and the Corporation was not doing very much for science. They did give the Institution \$5 million while I was sitting on the board, but they did it very promptly. I always suspected that they did it so promptly because they thought if they delayed I'd go after \$10 million. But they gave the money anyway. The Institution occasionally handled things for the Corporation when they got into a bit of a mess, as for example, with the chimpanzee colony in Orange Park, Florida. It's the only time that I ever found myself

1) FORWARD AGAIN
2) CIW AND CORP.

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managing a flock of actual chimpanzees.

(X-REF FORWARD TO PAGES 549, 625) I've managed some strange-acting people at times, including a number of strange faculty members, but I think this is the only time I ever got into the job of managing monks.

This came about quite indirectly and we merely got the thing on its feet and then got out. I first served on the Carnegie Corporation under their rule that the presidents of other Carnegie organizations automatically became members of the board of the Carnegie Corporation in New York -- that is the Carnegie Institute of Technology in Pittsburgh, the Carnegie Hero Fund, the Carnegie Foundation for the Advancement of Teaching, the Carnegie Endowment for International Peace and of course the Carnegie Institution of Washington. There were quite a number of us on the Carnegie Board, ex officio. Later, the Corporation changed its

1) CARNEGIE CORP.

2) CHIMPS, ETC. '

bylaws to eliminate this, which was a good idea, because it was utterly artificial. I always felt a bit embarrassed in sitting on that board, not quite free to act as I wanted to, because I represented an outfit that itself needed money. When the Corporation changed the rules, it merely let the terms of those that were on ex-officii expire. I always thought that they then re-elected me as an individual. Certainly I acted as an individual for my remaining years. But when I left the Institution, I learned that I was automatically off the Corporation board. Maybe I was, legally -- I'm not at all sure -- but I certainly had in my mind that I'd been serving for a few years as an individual, elected in the ordinary manner. At any rate, this stirred up my insides enough so that at dinner, which we had in Russell Leffingwell's house, (QUERY: DATE OF DINNER) and after having had a couple of drinks, I finally let loose and

1) CARNEGIE CORP.

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told the crowd that while I was sorry to leave them, because I liked them all so well personally, I was glad to shake off the responsibility of sitting with them and giving away money. We'd been doing that for years, and I had the feeling we'd just been heaving coins down a well, and couldn't even hear them splash.

I'm afraid my explosion didn't do any good. I asked Elihu Root afterwards if I had gone too far and he said he didn't think so, but this problem of giving away money is not a simple one. I had a feeling that we'd subsidized a lot of things that just resulted in a report on the shelf which nobody read. Maybe that's too harsh, but there seem to me to be some really tough problems in the world that don't get attacked. For example, they challenged me that night and said if I thought some of the things they were doing were unrealistic, what

- 1) CARNEGIE CORP.
- 2) GIVING AWAY
MONEY

Reel 2-A
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would I suggest? Well, I told them chemicals that control the emotions had now come into use in the world. There's a new chemical, that just a few micrograms of it will give a man some of the symptoms of schizophrenia for seven or eight hours. There are tranquilizers; there are going to be a host of chemicals that change man's emotional state, and may change his cerebation in strange ways. The problem of handling narcotics. I think it would pay to take a look ahead on this thing, and see how it should be controlled, and when we need also to ferret out what jobs are getting under way on this in research laboratories about the country, and put some far-seeking chap to work extrapolating to tell us what may be coming.

One difficulty was that the Corporation -- and I suppose every Board of Trustees of that sort -- is always afraid of getting into a

- 1) CARNEGIE CORP.
- 2) REALISTIC VS.
UNREALISTIC ENDS

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political arena, even on the very edges.
But I don't think they looked too far ahead.
For example, the Rockefeller Foundation for
years did a magnificent job in the tropics
combatting tropical diseases. It was an
awfully long time before they found out that
they were merely making the problems of the
countries involved, tougher. Now they are
beginning to do some real work on birth
control, population control, but it always
seemed to me that if fund-granting outfits
had more courage, if they took more chances,
we might get somewhere faster.

1) REALISTIC VS
UNREALISTIC ENDS

* * *

Question 13: Did VB set a record of tenure at CIW?
Henry Pritchard not beloved at MIT?

I haven't any idea whether I set a record
in tenure in the CIW. It would be easy enough
to find out in the record if anybody wanted to
know. (VB didn't. Merriam was President of
CIW from 1921 through 1938, a total of 18 years.

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VB was President of CIW from 1939 through 1955 a total of 17 years) I was preceded by J.C. Merriam, and while I don't know how long a tenure he had, I know it was too long. The trustees knew it too, but like many boards of trustees, they hesitated to face up to the facts and ask the old boy to step down. He certainly didn't want to, so that his tenure went on for some years after he was past the point when he should have administered anything, if that time ever existed. The great president of the Institution, of course, was Daniel Coit Gilman, the man who built the Johns Hopkins into a really modern university. He had an uncanny ability to judge young men, and with it brought to Hopkins a whole galaxy of individuals, such as Rowlands and so on, who made Hopkins the graduate school that led the way in this country. He was president of

1) BACK TO CIW

2) GILMAN AND
JOHNS HOPKINS

(ital)

(ital)

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the CIW for a while; then he had some sort of run-in with the trustees and promptly got out. I think his run-in was a very simple one; Gilman was President, but Walcott as Chairman of the Board, was trying to run things from the back seat. He tried it on the wrong man. Gilman didn't put up any battle, he merely moved. I had a bit of it worked on me after I joined. The Chairman of the Board when I joined was Governor Forbes*. He had a bit of a dictatorial attitude for a while -- I had a showdown with him and that was that. The showdown may be worth telling about some time.**

(X-REF TO PAGE 155) We had an annual meeting of the board. And before that annual meeting, the Executive Committee had met, and decided on a policy to recommend to the full board re some particular matter. Forbes was supposed to transmit this to full board. But between Executive and full Board meetings. Forbes met with Herbert Hoover, who was not a member of

- 1) CIW PRE-WAR
- 2) W. CAMERON FORBES

* Wm Cameron Forbes
** CL notes: Could not find mention of it in W.C. Forbes file.

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the Executive Committee, whereupon Forbes went into the full Board and presented Hoover's idea rather than the Committee's idea. This didn't sit with the Committee very well, and several members of the Committee jumped on his neck. Forbes had been very disagreeable at this meeting, as he often was, and he'd annoyed me no end, but I'd kept my peace. When he was about to leave, he came to my office to say goodbye. In the course of this, he told me, apparently to get some sympathy, that some members of the Executive Committee had been rather rough on him. I told him I was glad they had, because it now saved me the trouble.

(ital) He wanted to know what trouble, and I said, "Well, you were discourteous to my wife, which I tolerate from no man. If it happens again, we'll have either a new chairman of the board or a new president. I'll place a side bet with you, if you like, as to which one it'll be." Things were left with that little kind passage, and I never had any difficulty with him afterwards.

- 1) CIW PRE-WAR
- 2) FORBES

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It was the one thing on which I could hit him hard, because while he was pretty rough with men sometimes, particularly subordinates, he always showed great courtesy toward women. I think most of the discourtesy toward my wife was imagined -- certainly she hadn't complained about it -- but he could be damned discourteous, so that's why I socked him. The fact that I had been laying for him for some time I don't think occurred to him.

- 1) CIW
- 2) FORBES

We got along very well indeed after that. I used to go down to Naushon Island^{*} [X-REF FORWARD TO P. 716] and visit him. This could be quite a show, because he'd got the idea somewhere that I could ride a horse, and he'd put me on a good spirited one. It's entirely possible, of course, that he remembered my crack at him, and thought that if the horse tossed me off into the bushes a few times it might make me a little tame. But they were good horses and I enjoyed it.

* See note of CY- Page 84-A

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Page 84-A

Note from Carol Young re. Nashon Island

Forbes had several homes. This reference sounds like Naushon Island, Woods Hole, Mass.

Another spot which Dr. Bush may have visited was "Bridwood", Thomasville, Georgia. Perhaps the riding occurred here, rather than at Naushon.

His third home was "Gay Farm" located in Norwood, Mass.

The second part of this question is something I really can't tell you about. I know Henry Smith Pritchard had some experience with Carnegie Corporation, but I can't reproduce it. It's easy enough to get it out of the records. When he left MIT in 1909, he was ill, as I remember, but I don't remember clearly. I don't know whether Pritchard was beloved at MIT -- this was before my time. The usual comment around the place of course was always one of great regard about Maclaurin, his successor.

- 1) CIW
- 2) HENRY PRITCHARD
- 3) MIT

* * *

Question 14: The McKay Trust and the "friendly suit"

We now come to Question 14 and before you get through with this one, you're going to roam all over hell's kitchen. In the course of discussing

this whole McKay Trust matter, I'm going to be rough on A. Lawrence Lowell, without any doubt. I think therefore there ought to be a better background here as a starter. I was brought up in the city of Chelsea, and my father was a liberal clergyman.

(Universalist) At that time, the center of boy life in the town was the YMCA, and the YMCA at that time barred liberals from membership, and also Catholics and Jews. As the net result of that, my boyhood friends were the Catholics and the Jews.

I was not only not a Boston Brahmin, I acquired a very considerable set of boyhood prejudices against them. These were rather rear-end-foremost prejudices, as prejudices are now regarded from a religious-racial standpoint. My prejudices were all in the direction that I thought I belonged with the Catholics and the Jews, some of the fellows that were out of luck

- 1) MCKAY TRUST
- 2) MIT
- 3) VB YOUTH
- 4) SOCIAL FORMATIONS
- 5) BOSTON BRAHMINS

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otherwise. I didn't have much use for the gang that lived up at the other end of the town. Now I've recovered from these prejudices over the years. In fact, in recent years I've got to know Boston Brahmins and descendents of Boston Brahmins well enough so that I think the world would be a better place if there were more of them in it. (QUERY: Why? Not a snide remark; a request for expansion)

But there isn't any doubt that my boyhood experiences developed in me a strange set of prejudices. There weren't any Negroes in the town that I remember. If there had been, I'd undoubtedly have had friends among them. I think this ought to be remembered sometimes when I criticize the actions of the Congress and the Supreme Court in regard to the way in which they're going about civil rights affairs, about sixty years later. I suppose my boyhood

- 1) VB YOUTH
BACKTRACK
- 2) SOCIAL FORMATIONS
- 3) BOSTON BRAHMINS

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point of view may have left a spark of belligerency in me. At any rate, I've over the years enjoyed, I know fully well, mixing it up with anyone where I thought there was a touch of stuffed shirt present. There are an awful lot of stuffed shirts in the world, so I've always had plenty of opportunity.

But, to get on with the story. A tie-up between MIT and Harvard was a fine idea because it did not make sense for Harvard to compete with MIT in engineering education. The McKay Trust was aimed at that specific purpose. (McKay Trust file and booklet are in Bush papers. Explains situation, CY) If it could be used to boost MIT on its way, it would have produced far more good for engineering than if used at Harvard and competition. So the general idea was sound, and Maclaurin worked on it hard because he felt it was sound, and the agreement "statesmanlike".

- 1) BACK TO McKAY TRUST
- 2) MIT AND HARVARD

Reel 2-A
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But Abbott Lawrence Lowell was a little cocky. He put the deal through with Maclaurin, and he pretty much ignored the trustees (or it may have been ^{the} heirs) of the McKay Trust, which was a mistake.

The McKay trustees proceeded to test the thing in the courts, in a "friendly suit". Now I don't know how really friendly they were, for I suspect they were annoyed with the way in which Lowell had gone about things. If Lowell had done the first job of getting thoroughly together with the McKay trustees, and jointly with them, had then asked the court for an interpretation of McKay's will to spell out how far the Trustees could go in collaboration with MIT, I think they might have gotten the right to go quite a distance. Certainly they'd have gotten a right to go where in effect things stand today, with MIT and Harvard jointly conducting quite a number of

1) BACK TO MCKAY
TRUST

2) MIT & HARVARD

projects -- such as a big accelerator and a magnet lab, etc. etc. And where any graduate student at MIT can take a course in Harvard without paying extra tuition, and vice versa. Where, in research projects, the Harvard and MIT faculties work closely together, one of the finest instances being the beautiful collaboration going on between MIT, and the Massachusetts General Hospital and the Harvard Medical School.

This is real, and the thing that was set up previously (?) was quite artificial.

(ital)

Now it didn't do me any harm at all, because when I entered MIT, it was just after the agreement had been entered into, and the agreement lasted until I finished my doctorate, the next spring. Hence I got the degree from both Harvard and MIT, and I think I was very near to unique in that, because in order to qualify you had to enter after the agreement was put into effect and graduate before it was broken up. I think there was one other chap who did it, (QUERY: Who?) and I think he's died

1) McKAY

2) VB AND HIS TWO
DEGREES FROM
HARVARD & MIT

(ital) since, so now I probably am unique.

When I finished at MIT, MIT proceeded to confer on me the degree of Doctor of Engineering. Under the agreement, Harvard was supposed to confer the same degree.

Much to its dismay, Harvard discovered that it did not have the degree to confer; that is, this particular degree had never been authorized through the regular procedure of the Faculty, and the President and Fellows. Kennelly called me in, and told me that under the circumstances Harvard had decided to confer the degree of Doctor of Science

(ital) provided I would agree that I would not let this appear as a separate degree. I've always been accused of being a little cocky, and my temper was not entirely calmed down at that time from the recent efforts of Kennelly to keep me from getting the degree at all. So I told him that I understood that Harvard had a contract under which they were supposed to take a certain action, that if they violated that contract, it was up to

1) HARVARD & MIT

2) VB'S TWO DEGREES
CONT.

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them and I certainly wasn't going to be a party aiding them to violate their contract. But they could be sure of one thing. If they granted me any degree whatever, I'd do as I damn pleased with it afterwards.

I left them in that somewhat disturbed frame of mind, and went to the Harvard commencement wondering what, if anything, was going to happen. I was duly called up on the platform, and A. Lawrence Lowell then conferred on me the degree of Doctor of Science. At least, that's what he said he was doing. They then gave me a diploma which I've never been able to quite make out, but it seems to be sort of a degree of Doctor of Mechanic Arts or something. At any rate, I'd never heard of it. Then they put it in their catalog -- without consulting me, incidentally -- after a while as Doctor of Engineering.

- 1) HARVARD & MIT
- 2) TWO DEGREES CONT.

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This has given me a good deal of pleasure over the years; for one thing, Harvard gave me a doctorate in science later on as an honorary degree, and I told Jim Conant that this was probably the first time that Harvard had ever given the same degree to a man twice. I told him that the first time they conferred it, I was sure they didn't mean it. Now that they'd done it twice, they'd begun to soften me up, and if they'd confer it a third time, I'd really take it seriously.

Later on, after this episode of the Harvard commencement, MIT ceased giving the degree of Doctor of Engineering and switched over to Doctor of Science. They then asked the previous holders of the Doctor of Engineering degree (I think there were only seven of them) to consent to the change in their degree. The rest of them, I believe, agreed, and the degrees were accordingly changed.

- 1) HARVARD & MIT
- 2) TWO DEGREES CONT.

But I couldn't agree, because if I had, I'd have completely reversed the situation and would have had the degree of Doctor of Engineering from Harvard and the degree of Doctor of Science from MIT, which would have been a strange reversal. So I didn't change. The result of that is that I think I'm the only man living who has the degree of Doctor of Engineering from MIT. But all of this is quite a wide trip away from the McKay Trust, etc. and so on.

- 1) VB'S TWO DEGREES
- 2) BACK TO McKAY TRUST

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Sometime after the war, Harvard was wondering what to do with its McKay money. The original trustees (VB: last heir) had died, and the main funds were coming into their control -- another seven million dollars or something of the sort -- and they were again puzzled. So Conant set up a committee to advise Harvard on this point.

(This does refer to Post WWII committee ** not of CY attached* on the McKay Trust) It was a very good committee, and Conant made me chairman

Attachment to Page 91

Note from Carol Young re. McKay Bequest:

Cf: McKay Report in Bush Papers

Panel on the McKay Bequest: was authorized by the Harvard Corporation on 4/4/49 to "examine the status of instruction & research in the field of mechanical engineering at Harvard, in order to determine whether adequate provision is being made for this field under the terms of the will of Gordon McKay, within the framework of this University, & to make suggestions as to whether this program should be amplified and, if so, in what way."

The Panel:

Zaff (?Jay?) Jeffries
Arthur E. Raymond
Hartley Rowe
John von Neumann
Vannevar Bush, Chairman

The Report of the Panel on the McKay Bequest was printed by Harvard U. in 1950. Copies of it are in the Bush Papers in the "McKay Trust" file.

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of it. (Panel on the McKay Bequest was authorized by the Harvard Corporation on 4/4/49) Now this must have jarred the Harvard engineering faculty rather seriously if they knew the past history which most of them did. But the committee went to work: we spent a lot of time at it, we studied the problems very faithfully, and we tried to give Harvard a recommendation that would really make the best use possible of the McKay money, and put the Harvard engineering effort on its feet. We stressed versatility, we stressed the training in engineering from a broad standpoint rather than a narrow one, and so on. I thought it was a pretty good report. (Copies of it are in the Bush papers in the "McKay Trust" file).

1) McKAY TRUST

I had one nice time in the course of our deliberations. We held our meetings in Massachusetts Hall seated about the round table, with one chair at the head of the

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table which wasn't occupied. One of the Harvard professors came in to advise with us, and I tried to seat him in that chair. He seemed quite reluctant, but he finally sat down in it. I discovered afterwards that that was the chair the president of Harvard occupied when he presided over faculty meetings. It seemed to make the professor a bit nervous, and perhaps a bit more responsive to our inquiries. So thereafter I seated all witnesses in that chair, I hope with some good effect.

We put in our report; after some deliberation Harvard adopted it, and the policy of the Harvard engineering training has been followed ever since, in close liaison with the applied physicists. I think it's working well. At any rate, it is true that where MIT draws the great majority of the men who go after doctorates in engineering under fellowships where they have a chance to select

- 1) MCKAY TRUST
- 2) AFTER WW II

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their own institution, and while this is entirely natural, Harvard draws a very good proportion of graduate students who come under similar circumstances. They draw heavily in science but they also draw for men who are looking for the applications of science and for engineering. So I think the thing has worked out all right. (EH TO VB: Unclear. How re-cast? VB TO EH: In general if a graduate student or a math fellow is headed for engineering he will pick MIT. If he thinks in terms of applied science, he will choose Harvard. The two are not today very far apart.) The fact that I'm not on the Harvard staff or in any of its bodies whatever, helps, because it might be a little dangerous for me to roam around the place. Certainly some of the old-timers on the Harvard engineering faculty who are specialists in various parts of the engineering curriculum, and all of whom I guess are now

- 1) MCKAY TRUST
- 2) AFTER WWII
- 3) MIT & HARVARD

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retired, didn't think much of our report, and I judge didn't think much of me personally. It is strange, however, that I hit the McKay problem twice and in such very different ways.

* * *

Question 15: Political climate of Massachusetts in 1920s

In Question 15, you ask me about the political climate in the state of Massachusetts in the mid-20s. As a matter of fact, I didn't know much about it at the time. This was pretty common to men in academic life, I think, also men in business to a certain extent. We didn't have discussions of political affairs; we didn't have news in the papers or the magazines that contributed to such a thing. Times have changed since then. Today people in academic life, and people generally, pay a lot more attention to political and international matters,

- 1) McKAY CONCLUDED
- 2) Q. 15 - POLITICAL CLIMATE OF MASSACHUSETTS IN 1920s
- 3) INDIFFERENCE TO POLITICS

Reel 2-A
Page 94

(X-REF BACK TO PAGE 20) a lot of this having come out of the war, of course. But men in the professions and in business are beginning, just beginning, that's all, in this country, to participate in political affairs, except of course for the lawyers, who always have been at it. Part of this is no doubt due to the fact that a political career is likely to be off-and-on, and a lawyer can afford to be off and on in his professional work, but most professional men cannot. However, there is now a marked trend toward more interest and more participation on the national level. Scientists are getting into affairs in general in a way that helps. In the affairs of the several states this is not true.(QUERY) I think we can look forward to the time, perhaps, when we will develop in this country a real participation by citizens who have real skills and intelligence and background

- 1) POLITICAL CLIMATE OF MASSACHUSETTS IN 1920s
- 2) INDIFFERENCE TO POLITICS

Reel 2-A
Page 94A

(ital) in the political affairs of the states.
If we do, we can make a revolution, and
it's probably the only solution for the
scandalous situations in state politics
throughout the country. In doing so, we
never will imitate Britain where political
life has always been regarded as a proper
career for a man of background, and some-
times wealth, and certainly privilege, for
a long time. The situation is changing
in Britain, of course. We will develop
a different form in this country -- and we'd
better do it soon.

In the 20s, I didn't participate in polit-
ical affairs, nor did I think much about them.
This reminds me of a remark made by one of
my colleagues at MIT (soon after I returned
from Washington in 1956), a man I knew very
well indeed and who'd certainly speak frankly.
He said to me, "I've wondered that you've gone

- 1) INDIFFERENCE TO
POLITICS, CONT.
- 2) BUT CHANGED TODAY
- 3) BUT BACK TO 1920s

Reel 2A
Page 95

as far as you have, because after all you're not a profound individual." He wasn't quite as blunt as this, but that's what he meant. He said, "When you started in at first, you showed some signs of getting the profundity that goes with real scientific accomplishment, but you didn't pursue it." Well, my answer to him was that when I started on my professional career, I was broke, I was married, and I doggone well had to earn some money. While doing that, I didn't have time for a lot of other things I'd like to have done. Undoubtedly, while I did start down the alley of trying to do some things that required real intellectual accomplishment of what might be called profundity. I didn't go very far, and this is no doubt due to two things: first, I just wasn't cut out for that sort of thing, and also, as I said to this chap, I just didn't have the time under the pressure of having to get my financial affairs in reasonable order.

- 1) VB AS YOUNG MAN
- 2) "NOT PROFOUND"
- 3) INDIFFERENCE TO POLITICS

Reel 2-A
Page 95A

But also: we paid very little attention to political affairs when the 20s were young. This was a general failure, however, and not confined to academic people. Citizens generally didn't pay the attention that they should have. Now part of this was because New England was emerging from a period in which it had been dominated by a very aggressive and successful group of pioneers: in the china trade, in business, in setting up the copper industry and in a dozen other ways. The next generation slacked down and had become, in general a bunch of four percenters. I accused a group of young Boston bankers of this one time (about 1932) when I was making a speech to them -- that they were cold as ice on everything except what that man in the White House might do -- and I think there was a good deal of truth in it. Part of this atmosphere accounts for what happened in the Sacco-Vanzetti affair.

- 1) WHY INDIFFERENCE?
- 2) QUALITY OF BOSTON

Reel 2-A
Page 96

Certainly neither A. Lawrence Lowell, S.W. Stratton, nor Judge Grant had any grasp whatever of the issues involved here, and what could be made of the thing by those in this country and elsewhere that felt that there was utter miscarriage of justice -- which, not at all incidentally, I think there was. I've already spoken about S.W. Stratton. He not only didn't have the mental capacity to grasp the details of the case before him, but more importantly, to sense the atmosphere in which these three men were really operating. I think the latter was also true of A. Lawrence Lowell. He lived a life among the elite for so long that he'd lost the common touch if he ever had it. And of course Judge Grant was much too old. Certainly the atmosphere around Massachusetts has changed since then.

- 1) WHY INDIFFERENCE
- 2) QUALITY OF BOSTON
- 3) SACCO-VANZETTI
- 4) S.W. STRATTON &
A. L. LOWELL

* * *

Reel 2-A
Page 97

When the war ended, a whole lot of new industries sprang up. Many of them were put together by men who'd been in the scientific and technical effort during the war. They had acquired visions of what might be done from examples they'd seen about them at that time, and were discontended at being tied down into a tight organization after the freedom they'd exercised during the war. Some of these fellows went out and started their own outfits. They very often started them because of some little instrument or gadget they could make, or because of something the military would buy in limited quantities. (Sometimes they could get government help in developing it.) These stimuli got little companies started all over the place. Now where were they? One grouped itself around Cleveland and some other places in the Middle West. There was a big group around Palo Alto in California, and various other places in California, but

1) BOSTON AT END
OF WORLD WAR II

(ital) there was a very large group in Massachusetts. Not only along Route 128 do we see [X-REF FORWARD TO P. 502] and 33] the results of that; we see it all over the place. Literally hundreds of little outfits got started at that time. Many of them were started and were able to preserve their integrity and avoid being merged or going bankrupt, because they had a bit of a patent control on some small affair where it certainly wasn't worthwhile for a big company to invade their territory, and take the risk of a patent suit. So they were more or less left to their own devices, were able to make a decent profit, and also to grow.

This is one of the reasons why I've always been an enthusiast for the patent system. I think it does just that thing, and I think that's just exactly what it was intended to do. It wasn't intended to reward inventors. It was intended to bring things into use for the benefit of the public. In fact I'd say

- 1) BOSTON AT END OF WORLD WAR II
- 2) ROUTE 128 & ITS COMPANIES
- 3) PATENTS

Reel 2-A
Page 98A

this: the principal safeguard we have in this country against the unlimited growth of enormous companies and the transfer of industrial power into the hands of the few only, is the competition given by a new group of young companies which continually starts up and competes, successfully, with the large established outfits. True, as they grow up, they're often merged. But they keep on coming. Just as long as our technology is flexible, as long as new things can appear, as long as courage and ingenuity and a few other things can start new programs, new industry, new industrial companies, we're going to see this as one of the finest aspects of the American industrial picture. The fact that this has happened in Massachusetts and New England, indicates that some of the pioneering spirit of the old fellows who built the clipper ships and made a profit out

- 1) BOSTON POST WW II
- 2) "ROUTE 128"
- 3) PATENTS

Reel 2-A
Page 99

of them, the old chaps who traded with China, the chaps that ran miners around to the Pacific coast after '49 and made a good profit out of their needs, and so forth -- the spirit which did that sort of thing, and which also, incidentally, did pretty well in importing rum from down in the West Indies -- that spirit is not dead by any means.

There is a tendency among a large number of young men today, perhaps the great majority, to overvalue security; to look for the place where they can't possibly be fired unless they insult the boss's wife or something equally forbidden. But there are also, I think, still an adequate number of young people who want to take risks, want to live a life that may be a short one but a merry one, and who want to carve out a place for themselves somewhere in industry. When the day comes that equally courageous, determined young fellows get the urge, generally and

- 1) BOSTON POST WW II
- 2) FREE ENTERPRISE
AND COMPETITION

Reel 2-A
Page 100

widely, to similarly carve out a place for themselves along political lines, we're going to see a transformation in this country that will be a very salutary thing. It may not come in this generation but it will certainly come, in my opinion.

1) FREE ENTERPRISE
& COMPETITION

* * *

Question 18: VB's personality as he sees it

2) VB REFUSES TO
ANALYZE OWN
PERSONALITY

Number 18 is a thoroughly loaded question. I'm not going to answer it, at least in the way that you pose it. It's utterly impossible for any individual to analyze his own characteristics. If he attempts to do so, he'll build some kind of a fake story, I think inevitably. This is not only because he can't look at himself, but it's also because he's bound to try to play down something and play up something else. He just can't help it.

Reel 2-A
Page 100A

So you'll have to get this part of the thing from comments on other people, from incidents and from all sorts of other things. [Three sentences cut here.] I suppose that what you had in mind was this: that quite apart from the job we're doing or trying to do, it might be nice to have on the record somewhere some things of this sort that wouldn't belong in the book we're talking about, but that might be interesting later on, after a while, if somebody was wild enough to try to write a biography. Well, I've always kept my records in such a way that I've been pretty sure I'd give a biographer a pretty rough time if one appeared. I've repelled a few in the past few years. And I haven't much use for biography, although I read quite a lot of it. I don't have much use for biographers, is my trouble. There are so few really good ones.

1) VB HAS LITTLE
USE FOR
BIOGRAPHERS

Reel 2-A
Page 101

(ital) The thing that I do like is the story of a man's involvement with something important. I've just read for the second time Omar Bradley's story of the European campaigns, and I'll probably read it a third time, I think it's bully stuff, and I'll refer to it, no doubt, as I go along at times. But as far as I'm concerned, I hope nobody'll ever write a biography of me, because I think it probably would be terrible. While I wouldn't know anything about it, because certainly while I'm alive I can fend it off, the feeling that some of my friends over the years might live long enough to read it kind of jars me. So you won't get any self-analysis out of me except as you get it out of incidents.

1) VB HAS LITTLE USE
FOR BIOGRAPHERS

Reel 2-A
Page 101A

Question 19: Concerns in 1939

In Question 19 you ask me what I was doing from January to September 1939 after I joined the CIW. It's easy to answer this question. The principal thing I was trying to do was put the Institution in order. My predecessor had left it in a mess, and I tried hard to get it back into shape with morale restored. Merriam was a strange chap. I won't dissect his character in any detail, but he wasn't much of a scientist. As a paleontologist, he'd had a little luck and he had a good deal of personal push. But his scientific accomplishments in digging a few bones up and identifying them was not the sort that appealed to the staff of an institution that was going ahead on its physics and chemistry and biology and what have you along modern lines and particularly, for example, the group at Mount Wilson that were leading the world in the new astronomy. Merriam knew this

1) CHANGE OFF
VB & CIW PRE-WAR

Reel 2-A
Page 102

well enough, for he had a very decided inferiority complex.

- 1) EARLY CIW DAYS
- 2) MERRIAM

This showed itself in some very interesting ways. He insisted on getting everything into his own hands in the Institution. The poor department heads couldn't do a thing without getting his approval. He undoubtedly did this because he was afraid of what the departments would do if he let them loose. Then too, he wouldn't make a decision unless he'd fixed things up so that if they went wrong, it would be somebody else's fault. He was cruel in his treatment of subordinates. I didn't have any use for him whatever, and Karl Compton had even less use for him because he'd gotten into a jam with him in some National Research Council board affairs. (This was the "Science Board" of the 30s. I've forgotten its correct name.)

The morale in CIW in 1939 was at an all-time low, and I had to take all sorts of steps to restore it, to get the operations back into the hands of the departments, and to get things rolling again. Oh, there were plenty of incidents. One is worthwhile reciting: Walter Gilbert (Merriam's righthand man as far as he had one) came to me. He had held the Institution together for several years, in spite of the old chief, and he was beloved by the staff. He really saved the Institution from a catastrophe by sticking on and doing the best he could under perfectly terrible circumstances. When I joined the Institution, he came to me and offered to resign so that I could have my own man as a sort of deputy, and I told him of course, "For Pete's sake, how do you think I could run this confounded thing if you didn't help me?" And I meant it. We worked together for some years in the greatest of harmony, and I

- 1) EARLY CIW DAYS
- 2) WALTER GILBERT

* CY NOTES: I BELIEVE THERE'S A LETTER IN BUSH PAPERS IN WHICH VB DISCUSSES.

Reel 2-A
Page 103

became very devoted to him. His wife, Leila, was one of the loveliest women I ever met, and one of the most capable. Well, what Walter had on his mind was this: he and one of the directors of the departments had done some very unusual things to try to get a British girl who had come over as a research assistant on a grant of some sort, out of a tough jam. They were doing things that they knew would get them into serious trouble if the president of the Institution found out about it. So Walter came to me with some trepidation before I'd taken office. Now, of course, I told Gilbert that I didn't have control of the outfit at the moment but that when I did have, no man could possibly get into trouble with me by doing the best he could for a damsel in distress -- provided the damsel was not in the classification that's usually described as gorgeous, and that when I was in command, I'd take hold of the thing

1) CIW - EARLY BUSH
DAYS

Reel 2-A
Page 104

and straighten it out. In the meanwhile, if as just a private citizen I could help them in any way, let me know. So they got the gal out of the trouble. There were a few other instances where I made it perfectly clear throughout the Institution that I was running the show, and that it was going to be a different sort of a party in that the men in the departments were going to run the departments and I wasn't going to interfere with them in any crazy way. There was an incident out at Mount Wilson that I may recite to you sometime -- it was a honey.

In Washington there was a lot to do and I didn't know much about the Institution. I had to learn something about astronomy, and I certainly had to learn a whole lot about biology, so I was a busy chap. Remember that at this time I was on the National Advisory Committee for Aeronautics, and I sat there with men from the military services, particularly

1) CIW - EARLY BUSH
DAYS

2) NACA

Reel 2-A
Page 104A

the Air Force. (At this time VB chairman
of NACA) Also remember that Lindbergh^e
was a member of this Committee. I was
very fond of Lindbergh, I liked him very
much indeed personally. He was a delightful
chap and he did some very nice things and
all of that, but he was so stubborn that
he'd drive you wild. One time Hap Arnold
got hold of me, said that Lindbergh was
about to make a speech, all about the dangers
of the great German Air Force. You'll remem-
ber that Lindbergh was taking the point of
view that Germany would overrun Europe
without difficulty, that it could subdue
England without difficulty through the Luft-
waffe and the only thing the U.S. could do
to save its neck was to keep out of things
completely. In this speech, Lindbergh took
a wild crack at the Canadians, or proposed
to. Arnold said he had worked with him and

1) NACA

2) LINDBERGH

Reel 2-A
Page 105

tried to get him to cut that out; he wondered if I couldn't try to persuade him to leave that out too, that it could do a lot of harm.

(LINDBERGH'S ARGUMENT X-REF FORWARD TO PAGE 700)

So I consulted with Lindbergh, and said that while I disagreed with his main argument, I thought he ought to stick to one point and not bring in extraneous matters if he was going to make his point effectively. But I didn't get to first base, and he made the speech, and it did a lot of harm. (QUERY: What harm was in Lindbergh's Canadian speech?)

In those contacts and so forth I had a pretty good grasp, I think, of where we were headed. I'd lived through the first war, and seen us waddle around, and waddle around, until finally we got into it, and I was pretty sure that we'd be in this new one before it was through. I also had great worries about about the German Air Force. While the "phony war" was going on I was pretty sure that this

- 1) LINDBERGH CONT.
- 2) DID BUSH EXPECT
WW II

Reel 2-A
Page 106

was a passing phase; that the Germans would strike when they got ready to strike. Many of us in the groups I was with were pretty well concerned that we were probably going to get into the war, that we'd probably get in too late, that we'd probably get in with ineffective weapons by comparison with the great German machine, and so on. Of course most of this came after the attack on Poland, but some of this conversation was occurring in the nine months that you're talking about. It was inevitable, because we were working with the NACA, with the Air Force, trying to improve the planes of the Air Force. Military men, long before the attack on Poland, were talking about what was coming, and how they could get their affairs in shape. While some of the things that I've said occurred outside your nine months, the discussions were far earlier than that. Of course, after the attack on Poland, and particularly after the end of

- 1) NACA
- 2) GERMANS & WAR RUMBLES

(ital)

(ital)

Reel 2-A
Page 107

"the phony war:, in 1940 we really got moving,
and a group of us had NDRC running in the
spring of 1940 before we entered the war and
not in 1941. But that's a story that comes
later. (QUERY: Meaning not clear)

1) BEGINNINGS OF
NDRC

2) POST "PHONY WAR"

Question 20: How did VB react to Senator
Borah's statement about it
being a phony war?

A large part of Question 20 was answered
in connection with Question 19. We can, how-
ever fill in a few things at this point. When
the "phony war" ended, quite a number of us
were already having conversations in Washington
as to how we could get things rolling. It's
interesting in this connection that I think none
of us turned back to see how we had done in the
first World War. I remembered some of it, but
I don't remember any consultations to see if
the methods used before were now applicable.
The people gathering of course included Conant
and Compton, Dick Tolman and a number of others,
and we had serious discussions of what could

Reel 2-A
Page 108

possibly be done. There wasn't any doubt in anyone's mind that we had to get to work on the matter of developing new weapons; that this was going to be a very important part of the war, that we would be in the war, and that it was essential to get started soon and not wait until things came to a head.

1) BEGINNINGS OF NDRC

At this point, Carroll Wilson and Oscar Cox got an idea. I don't know who originated it -- probably Oscar Cox. Oscar was a lawyer in Washington, he'd had a lot of experience with government, he'd worked closely with the White House, it is said that he'd drafted the Lend-Lease Plan (X-REF FORWARD TO PAGE 368)

for example. Carroll Wilson had been my aide at MIT when he was aide also to Karl Compton.

* He was with Research Corporation and just as soon as things got tough, he left the Research Corporation and came down and worked for me.

(X-REF FORWARD TO PAGE 384) He was, in fact, directly attached to me and my principal aide

* NOTE FROM CY: THE NAME OF THE OUTFIT WAS RESEARCH CORPORATION (NEWBURG STREET, BOSTON) HE WAS THERE THROUGH 1940, I BELIEVE.

Reel 2-A
Page 108A

throughout the war, and he was utterly invaluable.

1) BEGINNINGS OF NDRC

Now the plan that was worked up was this: in the first war, there'd been a sort of a council set up, which had quite a lot of authority in one way or the other, and came under the president. (X-REF FORWARD TO Pages 237, 368, 398) The Act of Congress which established this had never been repealed so it was theoretically still in existence. It was therefore possible, if the president saw fit, to set up an organization under that old law, and have a basis on which he could use funds from the Executive Department to further its aid. (The rest of the story will come later). I talked to Harry Hopkins, I saw the president and we got the thing on the road. But that's what was in our minds at that time and that's how we went about it.

One point was: how much money could we effectively use? I remember the first meeting

of NDRC, when we discussed this; talks around the table were to the effect that we probably could use five million dollars. Well, we used considerably more than that before the show was over. But at that time we were thinking principally of subsidizing already existing universities and laboratories and the like, and we were thinking primarily of rather fundamental work, not on hardware and development. It wasn't long after we got going before we had to change our tune completely.

(ital)

1) BUSH'S POSITION
RE CIW
NACA
NDRC
etc.

Question 21: Previous traditional peacetime role of the president of CIW

Now Question 21 is on the previous traditional role of the president of CIW, and the relations of this organization to the government. Of course with two laboratories located in Washington, CIW was in collaboration with various government bureaus on various things. But, as far as the president of the Institution was concerned, if he had any relations with government whatsoever, they occurred through the National Research Council and the National Academy of Sciences.

Reel 2-A
Page 110

The NAS (MORE COMPLETE VERSION ON PAGE 200) was set up by President Lincoln at the time of the Civil War to advise the government in scientific matters. The NRC (MORE COMPLETE VERSION ON PAGE 201) was set up in the First World War in the same way (by Woodrow Wilson) to supplement the work of the Academy. This was the natural place, then, to turn when one thought that mobilizing science could proceed with the war effort. It's very interesting that the group gathered to discuss this (and Conant, Compton, Tolman and I were all members of the Academy, of course) no time, as far as I can remember, proposed that we work through the NRC, or that we'd get ourselves established as a branch of that Council and then go after money from that standpoint. (ital)

The fact that we did not do this I think was due to the conviction in the minds of all of us that the Academy and Council organizations were so cumbersome that they could not possibly be flexible enough to accomplish the task. So we went ahead for an independent organization, and it's very fortunate that we did.

1) BUSH'S POSITION
RE CIW
NACA
NDRC
etc.

2) NDRC & OSRD
IN EMBRYO

Reel 2-A
Page 110A

As will probably come out later, at the time that OSRD was formed (ORIGINS X-REF AHEAD TO PAGES 399-402) the matter came to quite a head, and I had a bit of a time in keeping peace with the Academy. (QUERY: should it be keeping peace with the Council? Weed was with NRC) But this is primarily due to a chap by the name of Dr. Weed, and I'll recite some of that by and by. (X-REF AHEAD TO PAGE 403) Except for that instance, we worked harmoniously with the Academy and Council throughout the war, especially on medical matters. They accomplished a great deal and were enormously helpful. But they could be very helpful only because we had a freewheeling organization to which they could come for aid. The Academy, with its organization, just simply could not have taken the lead. But more of this later. We now turn the tape over to get to the second side.

- 1) NDRC & OSRD
IN EMBRYO
- 2) FORESHADOW OF
DR. WEED
- 3) FORESHADOW:
MEDICAL MATTERS

END SIDE 2-A

Reel 2-B (beginning)

Page 111

Question 22: VB's machine for cryptanalysis

We now come to a very different affair. Then we go back to the days when I was working under Karl Compton at MIT. We talk about cryptanalysis, which I think is the correct term, and not cryptoanalysis. I suspect that security on this particular subject is no longer important. Certainly if we were going to use part of this we ought to check and be sure that nothing we say could have any ill effect from this standpoint.

(EDITORIAL N.B. THE PREVIOUS SENTENCE) But of course in this recital I'll talk about this matter somewhat generally and won't get into technical details.

(ital) The Navy, which was running a section on cryptanalysis, came to the conclusion that in order for it to be effective, it must mechanize -- it had to automate, in present-day terms. The Navy called me down to Washington to consult on it, which I did for several days. I looked over the plans.

In general these were to use IBM card

machinery as an aid to their job of breaking

- 1) CIW
- 2) NAVY
- 3) CRYPTANALYSIS
- 4) MIT-FLASHBACK

Reel 2-A
Page 111A

ciphers. I came to the conclusion that this was not good enough. I told them that if they were going to mechanize at all, they needed machinery that was special, made especially for their purposes, and which would work at least 100 times as fast on the type of problem they had in mind, as the things from IBM which had been designed for other purposes. A bit later they came back and asked me just what kind of a machine I thought might do it. I described pretty generally the sort of attack I thought might have some possibility of success, whereupon they asked me if I'd build them that kind of a machine. I told them that I certainly would, but that I wanted things to be on a basis where I could work pretty freely. In fact, I said I wanted them to pay the expenses, that I wanted no fee myself, that MIT would take care of the overhead, so that I wanted to receive only out-of-pocket expenses on running the job. On the other hand I didn't want to be tied down to

1) NAVY

2) CRYPTANALYSIS

Reel 2-B
Page 112

reports; I certainly would give no guarantee of success, and I was to be left absolutely free as to how I did the thing.

- 1) NAVY
- 2) CRYPTANALYSIS

Well, the officers I was talking to agreed to this, more or less -- at least they seemed to. But shortly after that, a Navy captain with a contract came up to my hotel and this contract had a lot of the usual clauses in it, some of them no doubt prescribed by law, that tied me down in one way or another -- so I said the hell with it. But after evidently a little searching of minds down in the Navy Department we had another discussion, and a very unusual contract was written. I think I still have a copy of that somewhere. (I think it's in my vault at the bank.) It's probably one of the most unusual contracts that the Navy ever wrote. I'm not sure but that some parts of it may have been illegal, but at least it was what I wanted, and of course it didn't mention the subject of the research.

Reel 2-B
Page 113

I went to work at MIT, and I developed a device. When I got the thing built, I delivered it to the Navy. While this was going on, only four people at MIT, (Karl Compton, two young fellows I had working on it, and myself) knew anything whatever about it. When I delivered the machine to the Navy, they took over the whole thing -- all the records, all the drawings, the machine itself, and the two men who had worked on it, so that nothing whatever was left at MIT, and I kept no copies of anything involved in it. So the whole thing went over to the Navy.

Well, then the war came along, and this machine was undoubtedly used in connection with the breaking of the Japanese code. I can't say how instrumental it was in that regard -- I certainly know it was used. Some of the young fellows in their enthusiasm said it broke the code. I doubt this, but I certainly know it was useful.

1) CRYPTANALYSIS
MACHINE

2) BREAKING JAP CODE

Reel 2-B
Page 113A

This led to a lot of incidents that were amusing. I remember one day some of the intelligence people over in the Army got me into a room, shut the door, and began to talk hush-hush. I don't know if they looked under the pictures to see if there were any bugs present, but at any rate, they evidently were going to bring me into something very secret. So I interrupted them to say, "Are you gentlemen going to tell me about the breaking of the Japanese code?" They went up in the air about a foot because that was being held very confidential indeed, and quite properly so, because the fact that we had that code gave us an enormous advantage in the Pacific war for quite a long while. We were very careful not to use the information that came out of the intercepts in a way that would give away to the Japs that we knew their code. The military forces gave up some real opportunities rather than reveal this, so no wonder the people in the Army were a little

1) CRYPTANALYSIS

2) NAVY

Reel 2-B
Page 114

disturbed. They wanted to know how I happened to know about it. So I told them, "Well, inasmuch as I built one of the machines you're using, and inasmuch as I trained some of the young fellows that are working for you on this thing, it would be very funny if I didn't know something about it."

- 1) CRYPTANALYSIS
- 2) NAVY

(ital)

Well the next incident took place after the war. Lovett, (Robert, Secretary of Defense) the secretary of the section on cryptanalysis, made a request in the budget. It was very hard for anybody to evaluate this, because an accounting officer somewhere couldn't be told what that section was doing. Secretary Lovett asked me if I'd look over the program, and tell him whether the budget request seemed to make sense. I went out and visited the outfit, and of course I knew most of them, at least the top ones. (This was in 1946 or 1947) There was a Lieutenant-Commander Winger who was really a grand chap on that sort of thing, and very devoted to it. When I went in to see him, here was my machine running.

I told him that I thought they were quite alert, that they hadn't know that I was coming

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out to see them until 10:00 that morning, and in the meanwhile they'd got that out of the attic, dusted it off, and got it running, and I thought that was pretty fast work. They took me around the corner, and here were six more machines just like it, all running. Then I told him that now I was sure there was something the matter with them, that they were using obsolete machinery. Well, as a matter of fact, of course, I looked over the rest of the program a bit, and I went to Lovett and told him I thought they made sense, and I guess they got their money in the budget.

(ital) Visiting this and talking with those fellows got me to thinking about the subject, and, indeed, by that time, my machine was obsolete. By that time the whole art had progressed to the point where it was questionable whether anything more could be done. Certainly far more speed was necessary if they were really going to have any success. So I wrote a memorandum

1) CODES AND
INTELLIGENCE

2) NAVY

and in it had some suggestions for a very much faster machine of a very different kind. As usual on any such matters, I wrote that memorandum in longhand, I made no copies, I sealed it, and I sent it up to them by special messenger. A day or two later, a young Lieutenant-Commander came down to see me about it. And I said, "Hope I didn't burden you too much by giving you that memorandum in longhand, but I think that's the way to do it. I hope you didn't have any trouble reading it -- my handwriting is pretty bad." He said, "You forget, sir, that our business is cryptanalysis.

1) CODES AND INTELLIGENCE

2) NAVY

* * *

Question 23: Message in period at end of sentence?
Message in frequency within a frequency?

This is on Question 23, and here you have me just a bit puzzled. I know that the business of putting micro-photographs into a very small space has all been discussed publicly, so certainly there's no trouble here from the security standpoint. I'm not so sure about the other matter that I mentioned, (N.B.) but I think I'll treat

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Page 116A

it pretty generally, and we can see later whether there's any danger here in getting into more detail. As far as the first part is concerned, one of the most troublesome things during the war in intelligence was to get at some of the messages sent by German agents where they used microphotography. They put their message into a bit of film that was so small that it could be put on a typewritten letter whereupon it was the size of, and looked just like, a period in a sentence. If one could find the thing, of course, he could enlarge it and read the message. With a lot of mail going through it was pretty hard to examine all those periods.

Of course, during the war, some of the chaps in my organization had relations with the intelligence, and we had a section which I'll talk about later, (X-REF FORWARD TO PAGES 683-686) which was devoted to the business of unconventional warfare, and work with OSS and so on, and of course we had men

1) CODES AND INTELLIGENCE

2) NAVY

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who worked with the intelligence people in other ways. (Most of the story on this is in the recent book by Stanley Lovell) For example, one of the standard intelligence methods in wartime, when an enemy agent is discovered, is not to clamp down on him, but just to see that he gets fed properly false information. The British used this magnificently (and so did we), so that the Allies got the Germans to think that the main attack on the continent was coming in the Pas de Calais, rather than the Normandy beachheads, as is very well told in Bradley's book*, (and also by a book about the dead major with the dispatch case, The Man Who Never Was.) In the United States, where we found there were German agents transmitting messages down to Brazil, perhaps, and through there back to Germany, and when our

- 1) CODES & INTELLIGENCE
- 2) FALSE SCIENTIFIC INFORMATION

* Footnote reference

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intelligence groups were feeding them information, they often wanted to feed them information along scientific lines. Some of our chaps sat in to try to concoct a story that would be sufficiently plausible to gain credence: which wouldn't give away anything essential, but which would successfully mislead. It was quite a game, and some of it was quite interesting. (VB: MUST HAVE SOME EXAMPLES)

Along the same lines, we worked exceedingly closely on all the business of finding out what the Germans were doing about the A-bomb, and this was Samuel Goudsmit's field (X-REF FORWARD TO PAGE 169) which he tells about very well in his book, Alsos. We worked very closely also in trying to find out what the V-1's were going to be, (X-REF: Constance Babbington Smith: IN CAMERA) and how many of them were going to be delivered, and in particular, what their warhead would be.

- 1) CODES & INTELLIGENCE
- 2) FALSE SCIENTIFIC INFORMATION

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Page 118 A

This again is something we'll come back to later in a very interesting story. (WHAT AND WHERE?)

1) CODES

On the other part of this question, just to state it in general, a group in OSRD concerned with communications developed a very fascinating method of transmitting a message, say from one ship to another, in such a manner that the chances of its being intercepted and deciphered were almost nil. We were quite excited about it. But in conversations with Navy officers we came to the interesting conclusion that we were already carrying on our communications quite satisfactorily. On the other hand, we had the Japs over a barrel. If they should discover, or stumble on, our "new" methods, it would be of far more service to them than it would be to us. If we began to use it, there was a distinct possibility that the Japanese listening to it or getting a record from it somewhere, might guess how it

Reel 2-B
Page 119

was being done. So, the conclusion was, and on this I agreed completely, we decided to bury the idea. We completely stopped development, we put all of the equipment in a place where it certainly couldn't be recognized, and we kept off that subject for the balance of the war. (EH TO VB: Can we now reveal? VB TO EH: I haven't seen it in print, but it may have been. I have no doubt the USSR knows how to do it) I think this indicates the closeness with which we were then working with the Navy. It was not a matter where they suddenly demanded that we lay off when they knew about the thing; we sat down together and discussed it, and we all came to the same conclusion.

1) CODES

2) THE DISCOVERY
THAT WASN'T USED
AND WHY

* * *

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Page 119A

Question 24: Six months ahead of the Germans
in re fission?

Now in regard to Question 24: we'll
come to this same subject many times, no
doubt. There was one time during the war
-- I can't think of the date -- (QUERY)
when a plant in Norway which was making
"heavy water" (used in atomic fission
experiments, and sometimes in atomic power
plants in the present day) was put out of
existence, I think by some air-dropped
British Commandos who blew up the penstocks.
Now aerial photography indicated that damage
was sufficient so that, in the opinion of
Air Force Intelligence, it should take
some six months to repair. I don't remember
the exact time, but I'll get the relative
thing right. Yet, as aerial surveys continued,
it was discovered that the Germans were
restoring the plant at a very much more rapid
rate. In fact, it would put it back into ser-
vice in something less than half the time than

1) INTELLIGENCE

2) THE GERMAN HEAVY
WATER STORY

had been first estimated.

Now what reason could there be for such haste? The only think we could imagine was that the Germans must need that heavy water for their atomic bomb development. If they needed it with that speed, then they must be about six months ahead of us in development, (X-REF AHEAD TO PAGE 413) because we were not going to be in the position where we needed any such supply for some time.

This was one of the early indications that we had in regard to German progress -- except that later we found out we were utterly mistaken! After the war, we discovered that what probably happened was something like this: Heisenberg and other German scientists came into the presence of the great Hitler, and told him about the possibility of an atomic bomb. Out of this, no doubt, came all the rumors from Germany in regard to a secret weapon, and you'll find that during the battle across France and Germany, the Allies were always worried

- 1) INTELLIGENCE
- 2) WRONG INFERENCE
RE GERMAN
HEAVY WATER

Reel 2-B
Page 120 A

that the German's secret weapon might come into effect. Probably some of the fanatical resistance of the Germans after they'd lost the war was kept alive by promise from Berlin that the secret weapon was about ready.

(EH TO VB: But maybe these were the V-1 and V-2 buzz bombs. VB TO EH: Very likely.

By that time they must have known they couldn't get an A-bomb in time to be useful.)

At that conference -- of course we don't know exactly what happened, but it's very easy to imagine it -- Hitler got very excited, and asked the scientists what they needed, and they said they needed heavy water. When this was told him he ordered that they should have heavy water at once. The plant in Norway was producing it, and when it went out of production, Hitler said, "Restore it at once." That's probably the sequel, and the probability is that the Germans did not need a large supply of heavy water at that moment nearly as much as we did. Of course at that time we were using heavy water in smaller quantities; the quantities the Germans were proposing to get from Norway

- 1) INTELLIGENCE
- 2) WRONG INFERENCE
RE GERMAN
HEAVY WATER

(ital)

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were very much larger.

Now there's another story that goes with this. This I can't tell you. I can't tell you really because I don't know it.

But when Germany went into Norway, this plant was already producing heavy water for scientific purposes, as I understand it, and there wasn't very much of it. But some chap smuggled out the then existing supply in a suitcase, through Sweden, and out into this country or into Britain. It's worthwhile to get that story (I think Conant will know where this story is told, if it is) sometime because it's an excellent one. [QUERY OF EH TO AB, LAE, etc.]

There's another story that goes with that. I've told you already about the Differential Analyzer Hartry in England had made which was almost a replica of the one we had here in the United States. The one here was computing ballistic trajectories, for we'd built a machine for the Army that they used down at

- 1) INTELLIGENCE
- 2) GERMAN HEAVY WATER (CONT.)

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Page 122

Aberdeen. And the Norwegians also built one for use in analyzing stellar dynamics. When the Germans invaded, they proposed to take it over. (X-REF AHEAD TO PAGE 693) The Norwegian, Rosseland, convinced the Germans that the machine was no doggone good, that they had far better ways of doing the job and so on. They disassembled the machine before the Germans got there; it was never assembled and taken to Germany; hence it never served to compute German ballistic tables. This is just a shorthand note of what occurred. The full story is a fascinating one. (QUERY: Where to be obtained. VB: I just don't know) Of course at that time, when the commandos went into Norway, dropped in for a sabotage job, the usual thing was that they tried to escape across the border into Sweden, and I guess they usually succeeded.

1) NORWEGIANS
DISASSEMBLE
DIFF. ANALYZER

* * *

Reel 2-B
Page 122A

Question 25: Verification of chain reaction and decision to go ahead with bomb possibilities.

Now we come to Question 25. There's a good deal to be said, and I'll probably tell only a part of it here. The first part of this story, of course, goes way back to the meeting in 1939 when it was first realized by physicists in this country that atomic fission had occurred, and hence realized that, as a consequence, a chain reaction might be possible. Now this meeting occurred in the CIW, and it was at that meeting also that Fermi gave the real explanation of the experiments that had been done by Meissner in Germany. (This is told in detail I believe in
* the history of AEC, and the recent parallel British history) It was there that the whole story broke on the physicists present, that here was a whole new physical phenomenon which might be of exceedingly great importance.

After that meeting, and I believe within 48 hours, the German experiments were repeated and confirmed in three different laboratories.

* AMTEH; Gov't. Pp. 24 and 25 of my Smyth Report.

- 1) FISSION STORY BEGINS
- 2) FERMI AT CIW

Reel 2-B
Page 123

This, however, merely confirmed that fission occurred. Thereafter, of course, physicists generally began to get to work on experiments to determine whether a chain reaction could be produced, and if so, how. These experiments had no government support at that time. Not much later, and before NDRC, a committee under Lyman Briggs was set up by the Navy to help on this subject. They coordinated information and held discussions, but they had neither authority nor money, so they naturally couldn't go anywhere. But there was intense excitement throughout the physics world, and no subsidy was really necessary, because the experimentation was going on in a lot of laboratories quite automatically, (X-REF AHEAD TO PAGES 125 AND 553) and by the personnel regularly attached to those laboratories.

Now, we knew that fission occurred. We knew that when a neutron under proper circumstances hit a U235 uranium atom, that atom split into two pieces. And we also knew that other neutrons appeared when this occurred. However, if one was to have a chain reaction,

- 1) FISSION CONFIRMED
- 2) WAS CHAIN REACTION POSSIBLE

Reel 2-B
Page 124

there should be more neutrons at the end of a fission than at the beginning. In other words, even though one neutron was used up in making a fission, more than one neutron must appear (EH TO VB: i.e. "pop up elsewhere?" VB TO EH: Not elsewhere, as one piece of the fragment) as a result, if we were to have the domino effect, the chain reaction. A lot of work was promptly undertaken to find out what this ratio might be and whether more than one neutron was released when the fission occurred. This work was going on everywhere, but there was one group in particular that I was in touch with -- Merle Tuve was in it -- which was attempting to prove that the ratio was less than one, and that hence no chain reaction could occur. As we talked among ourselves, our general point of view was that we hoped this would be

(ital)

- 1) FISSION
- 2) CHAIN REACTION
POSSIBLE, ALAS

Reel 2-B
Page 124A

the case, because none of us had any relish when we contemplated the reverse possibility. Our reasoning may not have been too deep. We may not have looked forward to the postwar world and all that, but at least we had the instinctive hope that nuclear explosives would be impossible, at least on the basis of the then-known information. So, one or two of these groups were definitely trying to prove that the atomic bomb was impossible. Before very long, however, it was proved quite the contrary -- that the ratio was greater than one, and hence a chain reaction was possible although it was still not clear, by any means, just how this could be made to occur. But the possibility existed.

(ital)

Now, I had no decision to make at that time. Most of this occurred before NDRC was underway. I had no authority, and the show would have gone ahead in any event, no matter what was decided by whom. The work was going

- 1) FISSION
- 2) CHAIN REACTION
POSSIBLE, ALAS

Reel 2-B
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on at that time in research laboratories,
and in universities; it was completely vol-
untary, (X-REF BACK TO 123 AND AHEAD TO
553) and not government subsidized. It
would have gone ahead anyway. All this bears
on the old story we've heard so many times,
that Einstein wrote Roosevelt, and this
started all the work on its way. Nothing
of the sort occurred. (N.B.) (X-REF FORWARD
TO PAGES 553, 623-624, 794) I can remark
for one thing that if Roosevelt read that
letter, he never mentioned it to me. Even
prior to the NDRC days the work was already
underway, and you could say that everything
was being done that could be done, because
the fundamental physics had to be established
before anything practical whatever could be
accomplished.

When NDRC was formed, the Briggs Commit-
tee was transferred over to NDRC (SEE SHERWOOD'S
ROOSEVELT AND HOPKINS) And after that we took
the responsibility, and we also furnished funds.

- 1) FISSION
- 2) THAT "EINSTEIN
LETTER" TO FDR

By that time it had become quite evident that there was a practical chance, all right, of success, so we began to move at a much accelerated pace. The Briggs Committee became a special section of NDRC. It was looked over primarily by Conant from the beginning.

After we entered the OSRD days, everything expanded in various ways. The Briggs Committee came over to my shop, and the work went on from there. The point I think I want to make is this: no decision was made by Roosevelt, by me, or by anyone else to proceed with the program, because the program was going ahead anyway, in all the laboratories that could get onto it, and nothing could have stopped them. When it came to the question of whether very large sums of money would be spent to build factories and plants, and put the thing on a basis where we might be able to produce usable bombs before the end of

(ital) the war -- then, of course, there were

- 1) FISSION
- 2) BRIGGS COMMITTEE
IN NDRC DAYS

Reel 2-B
Page 126A

decisions as to whether this was worthwhile, in terms not only of the money involved, but in terms of what it would undoubtedly do to interfere with other projects important in connection with the war. That was the only time a decision occurred. If we want to get the thing accurate, we'll have to get the records of just when the Briggs Committee was transferred and so on.

There's something of this in Sherwood's account of Roosevelt and Hopkins, and in there he says that -- well, he prints in facsimile the letter that Roosevelt sent to me turning the whole thing over into my hands, and this of course gives the date. In connection with that letter, Sherwood says, Of course Bush wrote this letter himself. Well of course I did, but it didn't become known that I had at the time that the letter issued. If it had been known at that time, it might have made a bit of trouble. By the time Sherwood published the fact, nobody paid any particular attention. It may have been, therefore, [QUERY]

- 1) FISSION
- 2) BRIGGS COMMITTEE
IN NDRC DAYS

that the actual transfer of this committee occurred after OSRD was underway, although I rather think it was earlier.

1) BRIGGS COMMITTEE
TRANSFER

* * *

Question 26: Bush at Alamogordo; best published account of Alamogordo

This is Question 26, which is a far less important question than the one I just answered. When Alamogordo ended, I folded up. In fact I had quite a severe emotional reaction for a day or two, so I went down to the Cape and recovered. (X-REF FORWARD TO PAGE 423) When I got down there, the postmaster, the local lumberyard operator and other Cape characters were asking me how long the war was going to last, and I told them, "Oh, a year or two." They wanted to know if any new weapons were coming along and I said, "No, we fired them all off at the Germans." I recovered very rapidly, of course. In a day or two I went back to Washington, and when I got there I picked up

1) THE BOMB
2) ALAMOGORDO

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Page 128

the phone and General Groves said to me
"It's on schedule, the plane is in the
air." The news came at about 11:00 that
day, I think. Of course when I went back to
the Cape after the war, some of these chaps
said, "You lied to us," and I told them,
"Yes, no doubt. I merely hope I did a good
job at it." (X-REF FORWARD TO PAGE 423)-STORY REPEATED]

Your question is about the conversation
I had with Senator Walcott. (FILE IN BUSH
PAPERS) He was a member of the Board of
Trustees of the CIW; he'd retired as a Sena-
tor some years before. He was an exceedingly
likable fellow. I was very fond of him, and
he and I went on a number of trips together.
Some time after the war, he said to me, "Van,
what were you thinking about at Alamogordo
just before the bomb went off?" And I told
him, "Fred, I was thinking that if the
physicists had calcuated the size of the thing
wrong, if it was a good deal bigger than they'd

- 1) THE BOMB
- 2) WALCOTT'S QUESTION:
"WHAT THOUGHTS
AT ALAMOGORDO"

Reel 2-B
Page 128A

expected, you'd need a new president for the CIW." "Yes," he said, "yes, but what else were you thinking?" "Well, I said, "I was also thinking that if the doggone thing didn't go off, you'd need a new president for the CIW." (X-REF AHEAD TO PAGE 412)

Right in this same connection, I had a brief discussion with FDR one time. I told him of the schedules on the bomb, the program, but of course I never told him that we were sure we could produce it, and I never told him that we were sure that we could stick to the schedule. One day I said to him, "You know, if we don't get this thing by the end of the war, it'll be pretty serious," having in mind that it would be more serious for him than for me. "Well," he said, "you know, we must get it, because when we come to the end of the war, the Country will relax, no doubt, as it did at

- 1) THE BOMB
- 2) WALCOTT'S QUESTION:
"WHAT THOUGHTS
AT ALAMOGORDO"
- 3) VB REPLY
- 4) TALK WITH FDR RE
BOMB

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Page 129

the end of the first war: if the program is continued at all, it'll be cut way back."

1) THE BOMB

2) FDR CONTINUED

And he said, "If this bomb is going to be what you tell me, it had better come into existence in our hands." (X-REF FORWARD TO PAGE 417) Now I'm not quoting him verbatim by any manner of means, and I made no record of that conversation I'm sure, but that was the general tenor of the conversation. FDR took quite a chance in backing me up,

(X-REF FORWARD TO PAGE 417) and in backing up the whole Manhattan District program, for that matter. But I think it's obvious he also considered the bomb to be inevitable at some time, and that for the sake of the free world it must certainly appear in our hands, and not in hostile hands.

(ital)

To finish up on this: I don't know which published account of Alamogordo is the best. In fact, I doubt I've read very many of them. I didn't need to get instructed in what happened out there, so why should I. I guess I'll

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Page 129A

have to look up some of them to tell you
whether they were accurate or not.

1) BUSHES IN
WASHINGTON

(VB, I'M LOOKING FORWARD. EH)

* * *

Question 27: Observations about Personality
on a Phenomenon

Well, my first comment in regard to your
Question 27 is that probably in the past
forty years of experience in interviewing
people, you've been interviewing the wrong
people. I can make one comment, and of
course I won't do anything in regard to analy-
zing this problem from the personal standpoint.
When Phoebe and I went down to Washington, and
over the next sixteen years, we met a lot of
people in important posts: in business, the
military, in politics, in government. And
we got to know some of them very well indeed.

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Page 130

Since, then, we've said to each other time after time: the greater the men are, the more simple they are in private conversation. The more accomplished, the more powerful, the more influential the men with whom we dealt, the more likely they were to be uncomplicated and plain straightforward in any private conversations in casual contact (context?). No intellectual gymnastics are necessary in talking with them, and no feeling that some sort of game is being played, or that somebody is putting on an act. Now this was true of an awful lot of people. I remember particularly Omar Bradley, with whom I've had many relationships, and still have, up to the present day, I remember Harry Morgan and dozens of others -- Elihu Root, Jr. ("Sec") in legal affairs.

- 1) BUSHES IN WASHINGTON
- 2) OBSERVATIONS IN SIMPLICITY OF GREAT MEN

Reel 2-B
Page 130A

The reason is, no doubt, that most of the people who put on an act, put it on for a reason. This may be because they have something to defend, or they think they have; or it may be merely that they want in one way to be in the limelight, and this is a way to do it. But the man whose success is behind him, or whose success is assured in his own mind, none of this acting is necessary, because it's an artificial thing, and not at all pleasant for anybody concerned. My experience over the years has been that when I find a chap who is especially touchy about credit for something, or who is quick on the trigger to defend any of the papers that he's written, or any of the theories that he's proposed, then you want to look a little closer and see if something's wrong. What's wrong may be that he's a little doubtful of his own skills.

1) OBSERVATIONS
IN SIMPLICITY OF
GREAT MEN

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I think one of the finest expositions of 1) GREAT MEN, CONT.
modesty I ever saw in my life came from Merle
Tuve. Merle is one of the most likable, modest
fellows I ever knew. He should have had the
Nobel. He has accomplished great things in
science which have never been fully recognized.
He's a philosopher, a very sound physicist, and
a great leader. At one time, a Nobel Prize
* went to an Englishman, Edward V. Appleton.
I was appalled when I heard the news and the
reason for the prize, because it was given for
using pulse radar in exploring the ionosphere.
Now I knew that this method had been developed
by Tuve and Gregory Breit.* I knew also that
when they were first using it, they saw pulse
reflections due to an airplane flying overhead.
(X-REF FORWARD TO PAGE 699) So it was one
of the important beginnings of radar. I knew
that and Tuve's department had used it for

* Breit needs footnote [VB to EH: MISS BAUER WILL HAVE HIS HISTORY.]

** [EH to VB: ALSO--DO YOU PAY YOUR RESPECTS TO WATSON-WATT LATER ON?]
[CY to EH: THERE'S AN EXCELLENT FILE ON WATSON-WATT & HIS CLAIMS ON
RADAR, ETC. IN BUSH PAPERS.]

* Appleton obit. in files (N.Y. Times 4/23/65)

years in exploring the ionosphere.

I was also fairly sure that Appleton had merely adopted Tuve's methods and gone ahead with them. This sort of thing wouldn't surprise me too much. I think the awarding of the Nobel Prizes is a little eccentric at times, and I've often had the question in my mind whether they do more harm than good. On this occasion I was more than a bit disturbed, because I was afraid it might hit Tuve rather badly. One day when I was out in his laboratory sitting in his office, we'd been talking about something else, I said, quite casually, "Oh, by the way, I notice the Nobel Prize just went to Appleton. Tuve's reply was immediate. Without hesitation he said, "Oh yes, I noticed that, isn't that fine. He's a very nice fellow." And we went on to other subjects. I don't think you can go much further than this.

- 1) GREAT MEN (CONT.)
- 2) TUVE
- 3) NOBEL PRIZES
- 4) MORE HARM THAN
GOOD

* * *

Reel 2-B
Page 132A

Question 28: What it takes to be an administrator; Coping with Merriam

I suppose one of the things that's essential -- well, at least useful to an executive is a bit of nerve. The incident you recite is illustrative of that more than anything else, I think. Perhaps a sense of humor also comes into it after a fashion, because when I went down to Washington, my predecessor, Brother Merriam, was very far from cordial. I visited him at once to pay my respects. He did nothing whatever about giving me a place to sit down in an office although he knew I was going to spend some time there, beginning to get acquainted with the Institution. I got hold of Sam Calloway, who'd been Merriam's secretary for years, and we walked around the building. We looked at the Board Room, and I said, "What happens in this place?" Sam said, "It's used as the Board Room once a year." I said, "Well, this looks like a good place to

- 1) QUALITIES FOR AN EXECUTIVE
- 2) BACKTRACK FOR ANECDOTE ON FIRST CIW DAY

Reel 2-B
Page 133

hang out; I'll move in here. Would you see that I get something in the way of a desk?" So, I occupied the Board Room for some time until I took over. Of course it was partly, no doubt, because I thought it might have a beneficial influence on the directors of departments who visited me to find me parked in the Board Room. Undoubtedly Sam had told them Merriam had not given me any place to sit down, so I had proceeded to swipe one, which was a good way to start the relationship.

Now this does lead to dozens of anecdotes, but most of them are not worth telling. One may be, I think: old Sam Calloway had been Merriam's stenographer or secretary for years. Merriam treated him like a dog. Therefore when I took over, it was quite a while before he got used to me. I don't think he could believe it.

- 1) QUALITIES FOR AN EXECUTIVE
- 2) BACKTRACK FOR ANECDOTE ON FIRST CIW DAY

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Page 134

The relationship was very cordial after we really got acquainted. (EH TO VB: Where's Sam now? VB TO EH: Retired in Florida) Sam [CY NOTES: VENICE, FLORIDA, I THINK.] was a perfectly extraordinary stenographer. When I go in where someone is typing, some girl, I'm careful not to ask her a question while her hands are moving, because if you do, she'll promptly make a mistake, and that'll prevent her from regarding you with affection. But with Sam, I could come out of my office, his hands would be flying over the typewriter, I could ask him a question, he would answer it, but his fingers would not stop. Now I know that the brain can operate in several compartments at once. Anyone who has driven an automobile knows this: but I think that was illustrated in Sam to an extraordinary degree. He could continue to read his stenographic notes, he could continue to keep his hands typing, and his mind could listen to my question, find the answer, and give the answer. Well, Sam, after he'd

- 1) BACK TO MORE
EARLY CIW DAYS
- 2) SAM CALLOWAY

Reel 2-B
Page 134A

gotten to know me and we'd taken over, used to find that Merriam would come to visit me once in a while. They were wonderful visits, because Merriam no doubt thought that the Institution would promptly go to the devil under my tutelage. He came in to find out what was going on, and to pump me, and of course I never told him a doggone thing. So he sat around a while and tried to open conversations, and I closed them, and after a while he'd get out. Sam would make the appointments for him. If Merriam got there ten minutes early, Sam would make him wait the ten minutes; he'd tell him I had someone in conference with me. But if the old guy got there ten minutes after his appointment, Sam might keep him waiting for twenty minutes before he'd let him in. I thought Sam was entitled to this little backfire after all he'd suffered, so I never interfered with it.

- 1) BACK TO MORE EARLY
CIW DAYS
- 2) CALLOWAY/MERRIAM

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One day Merriam sent me a book he'd written, The Garment of God. This was some time after he'd retired. It was a book about the beauties of nature written for the dumb clucks who don't understand the beauties of nature -- a little thin volume. I took it home and I gave it to Phoeb and I told her, "Here's a book just written by a friend of yours," and she hove it at me. Some days later, oh, maybe a couple of weeks later, in going over the mail Sam brought me to sign I found on top of the pile a letter to Merriam he composed, thanking him for the book. Well, I read it. Then I stopped and looked at Sam, and then I read it again. I did this two or three times because that letter had double meanings to an extent that was extraordinary. Sam must have spent hours composing it. Every sentence could be read in two senses. I looked at Sam, and his

1) CIW

2) CALLOWAY/MERRIAM

Reel 2-B
Page 135 A

expression didn't change in the slightest.
Neither did mine. I read the letter, looked
at him again. Then I picked up the pen,
signed it, and handed it to him, and neither
of us said anything. (The contents of the
letter are as follows: "In these strenuous
days when so much of the research effort
of the country is directed toward objectives
having direct relation to our war effort,
it is comforting to have the evidence of
your book that there are still some scienti-
fic men whose studies and writing are maintain-
ing the philosophic and aesthetic aspects in
the advance of knowledge.") The real joke about
this, if there is one, is that undoubtedly
when Merriam read that letter, he didn't see
anything odd about it whatever. But when
Sam composed the letter, he knew perfectly well
that I'd see what was in it, but he was also
perfectly sure that Merriam wouldn't see
anything out of the way. Now the human person-
ality is a pretty complicated thing. But I

1) CIW

2) CALLOWAY/MERRIAM

* See page attached.

Attachment to Page 135 A

NOTE FROM CAROL YOUNG

The Garment of God received by VB on 3/4/43. VB
acknowledged receipt of book thusly:

"In these strenuous days when so much of the research effort of the country is directed toward objectives having direct relation to our war effort, it is comforting to have the evidence of your book that there are still some scientific men whose studies and writing are maintaining the philosophic and aesthetic aspects in the advance of knowledge."

(That was the second paragraph. The first was as follows:)

"Thank you for sending me the inscribed copy of "The Garment of God" which reached me this morning. I shall look forward to an opportunity to read it with care."

kind of think I'd join Sam on that, and that I personally, in the same position, would have gotten quite a personal kick out of doing just that.

- 1) CIW
- 2) MERRIAM
- 3) TRUSTEES

* * *

You finally ask, "When did Merriam finally move out?" Well, he stuck around. He took an office in the basement, undoubtedly so he could tell the trustees I was abusing him. I just passed the word around to the staff, or I let Sam do so, that it'd probably be just as well not to tell the past president of the Institution anything about its current affairs. I think the whole group was quite glad to conform to that suggestion, so he didn't get anywhere. But, whenever the trustees came down, of course they dropped in on Merriam. Well, I stood this for a while but finally I got tired of it, and one day when the trustees were coming

in for a meeting, I remarked without any explanation whatever that I'd be just as happy if they didn't visit Merriam. So none of them visited him, and shortly after that, he moved out. Like most men of his type, he got himself into all sorts of troubles. His wife died, and he had a very unfortunate second marriage, and things got to the point where I really began to feel sorry for the old guy. But if anybody ever asked for it, he certainly did.

- 1) CIW
- 2) MERRIAM
- 3) BUSH INAUGURATION
DINNER --
MRS. CARNEGIE

* * *

Question 29: Manners as a technique of executive high control

I suppose your Question 29 could make the subject of quite a lecture. I don't know that I'm inclined to make one. I think you could say that Merriam tried to turn the dinner into a farewell dinner to himself, that he tried to take the spotlight, that he was not properly courteous to Mrs. Carnegie. (Incidentally, Mrs. Carnegie was not so old, she was fifteen years younger than Andrew.

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Page 137A

I knew her for many years after this dinner, and she was a delightful person.) Of course I made a speech, and the trustees liked it. They couldn't very well help calling on me, at least. The net result of Merriam's actions was of course that it didn't make the trustees sorry for me; it made them, I think a little relieved that they didn't have to go on with that sort of thing much more. As for the staff that were present, it put me in the same position with them, so it helped to get started. It was a lot of help.

* * *

The story with Mountbatten was a vastly different story, and illustrates something quite different. I think modesty's a great thing provided it's natural and doesn't have to be assumed. But, I don't think anyone in an executive post ought ever to cultivate modesty to the extent that he forgets that he's the boss, but the boss can be the boss

- 1) CIW
- 2) BUSH INAUGURATION
DINNER -- MRS.
CARNEGIE

Reel 2-B
Page 138

in various ways. One aspect of this, of course, is that a man who's carrying heavy responsibilities can't allow a statement in his presence that indicates that perhaps he isn't, without contradicting it.

This was the kind of thing that happened when Mountbatten came to see me. He had with him a chap named Pike about whom I could tell all kinds of stories (X-REF AHEAD TO PAGE 694) and who was a confounded nuisance both to the British and ourselves. In Washington, he had a lot of wild ideas. He had sold some of them to Mountbatten. Mountbatten had sold some of them to Churchill, and when Pike got over here, he roamed all over my shop and all over the Army, and generally got things into a snarl. He came in to see me with Mountbatten, just after having left the President. After the usual courtesies, there was a fairly pleasant conversation

- 1) EXECUTIVE BEHAVIOR
WORKING MANNERS
- 2) MOUNTBATTEN AND
PIKE

about one thing and another. Then Pike brought up one of his great schemes, and in the presence of Mountbatten went on to say what the U.S. *(CORRECT?) Army was going to do about it, and what my shop was going to do about it, with the implication that these were instructions being transmitted to me by the President through him. (He was relying, I'd judge, principally on the fact that he had Mountbatten with him). Well, I took this for a while. Then I smiled at Mountbatten and said, "You know, this chap seems to be forgetting something. I take my orders from the President of the United States, and I don't take them from anybody else." The extraordinary thing here is that Mountbatten could have readily made that into a joke, but he didn't. He didn't say anything. He didn't say, "Wait a minute, Pike, you're getting off the rails." He just let it go, and that pretty much ended the conversation.

- 1) EXECUTIVE BEHAVIOR
WORKING MANNERS
- 2) MOUNTBATTEN AND
PIKE
- 3) (VB)"...I TAKE
MY ORDERS FROM
THE PRESIDENT OF
THE UNITED STATES"

Reel 2-B
Page 139A

I've always wondered after that what kind of a man Mountbatten is. (X-REF AHEAD TO PAGE 696) I've had contacts with him in other ways -- nothing that ever got into a jam -- but not very many contacts. But it struck me as very strange indeed that a man in his position, in such a place as he was then, and outside of his own country, would miss the chance to say, "Oh well, these child psychologists (EH TO VB: This was, in reality, what Pike was? VB TO EH: He committed suicide after the war.) get enthusiastic once in a while, and we have to forgive them," whereupon the whole meeting would have ended very pleasantly. Why is it? Is it because being a member of royalty is just too much? I don't know. At any rate, that was the episode.

- 1) EXECUTIVE BEHAVIOR
WORKING MANNERS
- 2) MOUNTBATTEN & PIKE

* * *

Question 30: Congressional Testimony

1) CONGRESSIONAL
TESTIMONY

I have testified before Congress a good many times, but of course, I haven't had it rubbed into me the way a Secretary of Defense or a Secretary of State has. Most of my appearances, of course, were during the war. Very seldom did I run into a hostile atmosphere; it was usually pretty pleasant.

When I first started to testify before Congress, the first time I did it, I was scared stiff. (EH TO VB: The topic was what? VB TO EH: Appropriations Committee of Senate on NACA appropriations) After a while I got so I didn't mind it, and then finally I got so I enjoyed it.

You mentioned the red book. Let's take that episode up, though it comes very much later than many of the things I have in mind. At the end of the war, Irvin Stewart and I kept

Reel 2-B
Page 140A

OSRD going so as to close out such contracts as were not closed out automatically. People have asked me once in a while why we closed down OSRD so suddenly after the war. The answer's very simple: as soon as the war ended, the entire group disappeared and went back to the universities. (X-REF FORWARD TO PAGE 702) So we didn't have anyone left except a business office, and that was under the command of Irvin Stewart. So we got some money from Congress to clear up the remaining debris on contracts. We thought we could do it in a year, but a year went by, and we still had two or three contracts left hanging, so I went up to the Appropriations Committee, and when I appeared -- by then they knew me pretty well -- when I appeared they said, "Well, look who's here! We thought we'd seen the last of you, and we thought you didn't need any more money, I replied that that was a hell of a way to receive an old friend, that

- 1) OSRD - POST-WAR
- 2) CONGRESSIONAL
TESTIMONY
- 3) IRVIN STEWART

I'd just come up to pay a social call, see how they were getting along, and I got that kind of a reception. I said I didn't need any money, I didn't come up to get money, I wanted \$60,000, but that wasn't money. So they sat me down and asked me a few questions for the record, because they had to have something in the record, of course, and then they began talking about all sorts of things. And old Congressman Cannon, (Clarence Cannon of Missouri who died last year) with whom I had a very interesting friendship before the war was over, got up and said, "Doctor you held out on us," and I said, "Why, Mr. Chairman, I never held out on this committee." "But", he said, "you didn't tell us about atomic energy." I said, "Now, Mr. Chairman, you remember when I used to come up here, during the war ~~XXX~~ I'd put a red book on the table in front of you, and I'd say, 'Mr. Chairman, in that book is a complete account

- 1) OSRD- POST-WAR
- 2) CONGRESSIONAL TESTIMONY
- 3) THE RED BOOK AND CONGRESSMAN CANNON

(Ital)

Reel 2-B
Page 141A

of everything my agency is doing.' And you'd say to the clerk, 'This is a very dangerous document. You'll keep it in the safe, you'll make it available only to committee members, and only right here.' And then we'd proceed with the hearing, and at the end of the hearing the clerk would give me my book and I'd take it back to my office and destroy it."

Now this was not shadow boxing. And when Cannon said, "You've held out on us," I recited that I'd put the red book before his Committee, and told them that it contained everything that my agency was doing. "Oh," he said, "but the atomic energy thing wasn't in there," and I said, "Oh yes it was, Mr. Chairman." "But," he said, "we wouldn't have understood it if we'd read it," and I said, "No, that's quite right, you wouldn't have understood it, but it was there." The point of course was this: that bit of scenery

- 1) OSRD-POST-WAR
- 2) CONGRESSIONAL
TESTIMONY
- 3) THE RED BOOK &
CONGRESSMAN
CANNON

if you will, meant this: I said to the committee, in effect, you're entitled to know anything you want to know about my agency, and they replied, we don't want to know any of it. But while my office used to growl at having to prepare the book, which had a very short existence, nevertheless, that book was important in the relations I had with the Appropriations Committee.

- 1) CONGRESSIONAL
TESTIMONY
- 2) RED BOOK (CONT.)

* * *

Over the years I learned something about appearing before Congressional committees. One thing I learned early, or fairly early, was that most of the committee members are pretty badly bored. They sit around all day and they listen to testimony which is not particularly illuminating or exciting, and if one introduces just a bit of humor into the situation he's welcomed with open arms, because it makes a break.

Attachment to Page 141

Comment from Carol Young on Cong. Cannon:

Clarence Cannon of Missouri; he was Chairman of the House Committee on Appropriations in 1952 according to my files. At this time, or in late '51, VB met with his Committee. I do not know if it is this instance to which Dr. Bush refers here.

Note from Joan Kauffman: Congressman Cannon died last year.

Reel 2-B
Page 143

Another thing of course that's very important is not to high-hat a committee. That was Acheson's great trouble. I like Dean Acheson; I worked with him quite a bit, got along with him well. I think he is a fine individual, though of course he made one or two very definite mistakes. But he was not popular on Capitol Hill; far from it. The reason was clear enough. He had no use for mediocrity, and he held the conviction that people in Congress were a mediocre crowd, from his intellectual approach, and this showed. There wasn't any doubt about it. The Congressional Committee members knew it, and reacted accordingly. Of course, this business of high-hatting is bad in any circumstance I know of, but it's particularly bad before committees of Congress. Usually the reason that they attack an individual on the stand is one of two things: either they're making a record for their constituents, or else they're just so doggone tired of listening to people talk that they stir things up

1) CONGRESSIONAL
TESTIMONY

2) ACHESON

Reel 2-B
Page 143A

for the sake of breaking the monotony. And I think they sailed into Acheson for both these reasons, but principally because he let them have the lead by showing them his general contempt for them. I was never seriously embarrassed at any time before a Congressional committee on the basis that I was carrying secret matters in my head and they were probing to find out about them. They just didn't do that.

The greatest example of this was that each year Mr. Stimson and I would go up to Congress and meet with groups in the House and Senate. The group would include of course the chairman of the Appropriations Committee, the senior opposition member on the committee, and so on -- five or six men. And in these meetings we pulled no punches whatever. I did the talking; most all that Stimson put in was that he had complete confidence in what was being said, and that he thought the money asked for was needed and reasonable. But I told them what the OSRD was doing, what the bomb was going to

- 1) CONGRESSIONAL
TESTIMONY
- 2) ACHESON
- 3) STIMSON

be like if we got it; what the size of it was, what the radius of action was, the way it would be carried, probable timetable, and also, a summary of where we thought the Germans were, and why. Now there was never the slightest leak out of any of those Congressmen. All of this business that Congress can't hold a secret is not true if in time of war the show is tense enough as of course it then was. There were no leaks. (X-REF FORWARD TO PAGES 219 AND 418)

* ^{during} And ~~XXXX~~ the war, the item for the Manhattan District was in the great Defense Appropriations, and it was sometimes concealed, or at least the labelling on it didn't mean much, and when it came up in the committees, the chairman of the committee would say, I know all about that item and you don't need to question it, and they'd forget about it. In this way quite a lot of money was appropriated. But on this

- 1) CONGRESSIONAL TESTIMONY
- 2) STIMSON
- 3) CONGRESS CAN , KEEP SECRETS

* [EH to VB: WE SEEM TO BE SWINGING BETWEEN WAR AND POST-WAR YEARS HERE IN A WAY I DON'T UNDERSTAND.] [VB to EH: WHY NOT?]

Reel 2-B
Page 144A

business of keeping one's secrets, I had some quite amusing things. One, I think was the session with McKellar. Now McKellar from Tennessee was chairman of the Appropriations Committee of the Senate in time of war. If there's anything that shows the absurdity of our seniority system, this was it. I don't have to go into the matter from the standpoint of what harm it might possibly do, nor my estimate of McKellar, which wouldn't look well in print, but let me give you one estimate.

McKellar used to call two or three agencies at once, and he'd let them sit around in the anteroom and waste time until he got around to hearing them. And on one of these occasions, Irvin Stewart and I went up on the Hill, and we did our share of waiting, and when we finally were brought in before the great man, we found McKellar and the clerk the only ones present. McKellar proceeded to ask a question or two which indicated to me that he didn't know what

1) CONGRESSIONAL
TESTIMONY

Reel 2-B
Page 145

agency he had before him. So I didn't enlighten him. And the show went on this way. He'd ask a long and involved question that had nothing to do with my agency, and I'd give him an equally long and complicated answer which had nothing to do with his question. Well, we kept this up for fifteen or twenty minutes and then he adjourned the hearing. And when we got out to the automobile to get back to the office and back to work, Irvin Stewart said to me, "That was a reasonably amusing show, but what are you going to do when that record comes down from the Hill?" "Well," I said, "if McKellar wants to print that record, it's all right by me; if it comes down I'm not going to change it." Of course it never came down, and nothing went into the record for the Congress that indicated that there even had been a hearing. But this,

- 1) CONGRESSIONAL
TESTIMONY
- 2) SENATOR MCKELLAR

Reel 2-B
Page 146

I think, shows what kind of farce you can have when a chap like McKellar can become head of an exceedingly important committee in time of war.

I might recite one more episode. One of the most dangerous things to do before a committee is to act worried. If they think you're trying to conceal something, you're really in for trouble. I could give any number of instances. One time -- this again with McKellar (X-REF BACK TO PAGE 144) -- Nelson Rockefeller and I went up to testify, and he testified first. And McKellar would ask him a question, and then turn and talk to his neighbor while Nelson was answering it. Then he'd ask another question, and when Nelson began to answer it, he'd ask another question right on top of it, and confuse him. Rockefeller probably took off five pounds during these hearings;

- 1) CONGRESSIONAL
TESTIMONY
- 2) BE CONFIDENT
- 3) NELSON ROCKEFELLER

Reel 2-B
Page 146A

sweat was running down his face and he was very considerably agitated. And then I went on the stand and I had no trouble. Of course, you remember, I'd had a lot of experience and at that time, he hadn't. McKellar started the same business with me; he'd ask me a question and turn to his neighbor, and I'd light my pipe. And he'd ask me two questions at once, and I'd sit perfectly silent and look around the room; he'd say, "Answer the question," and I'd say, "Which one?" It didn't take very much of this before the rest of the committee members said, "Come on, let's get on with this business," so then there were a few questions and it was all finished. Nelson and I got into the automobile together and started back downtown, and he said, "Van, why was it I had all kinds of trouble before that committee and you didn't have any?" "Well," I said, "Nelson, your name is Rockefeller." "Well," he said, "yes, that was part of it, but it wasn't

- 1) CONGRESSIONAL
TESTIMONY
- 2) BE CONFIDENT
- 3) NELSON ROCKEFELLER

all of it." "Well," I said, " if you want me to tell you, I can tell you what the rest of it was. You looked worried, so they sailed into you. I acted completely as though I didn't give a doggone what they did or asked or said, so they left me alone. And that was the most of it." "Well," he said, "I'll certainly learn that one." And he's learned that one and many more things about dealing with committees and Congress and the public since that day.

Of course if a person's got any sense, he makes a little study of who's going to be present, in preparation for being a witness before a Congressional committee; what they're likely to sail into, and what their general characteristics are. (X-REF FORWARD TO PAGES 149, 698) Also it doesn't do any harm at all, I'm sure to indicate here and there that you have a reasonable appreciation of

1) CONGRESSIONAL
TESTIMONY

the tough spot the committee members are in. I was before one committee -- I've forgotten which one -- and they were looking into a Navy matter, and they began to ask me about it, and it was none of my business, and I was trying to shear them off, but with no luck, and it was a highly technical thing. But one of the committee members said to me, "Now Doctor, how do you expect me to understand as complex a technical matter as this sufficiently well to pass judgment on it?"

1) CONGRESSIONAL
TESTIMONY

(X-REF FORWARD TO PAGE 203) I said, "I expect you'll do what you usually do under these circumstances. You'll listen to a lot of people talk, you'll come to some conclusions in your mind as to which ones seem to make sense, and you'll go along with them. Fortunately you're all good judges of human nature, or you wouldn't be here." Well, now, one would expect that a Congressional committee wouldn't care for that kind of an

REEL #3 BEGINS HERE

Reel 2-B and 3-A
Page 148A

answer. On the contrary. They all laughed and we went on with the discussion in a very friendly way.

1) CONGRESSIONAL
TESTIMONY

Once I was waiting to go on the stand before a committee -- there was no audience as I remember -- the chap being questioned was someone on the staff of the NAM. He was on a spot, because he didn't dare to say much for fear he'd get in trouble with his chiefs back in the NAM. The Senators knew the spot he was in, and were just enjoying giving him a ride. They got plenty rough. He was sweating and he had a devil of a time.

Finally he got off the stand and I went on. The first question somebody asked me was the kind of question that Congressmen use when they're trying to stir up a witness, or get his goat or something; so I said, "Mr. Chairman, I think there's

Reel 2-B and 3-A
Page 149

an error being made here. I'm not a representative of the NAM, and the whole atmosphere changed and we went on all right.

I think this illustrates one or two things. In the first place, only a lot of experience will get anyone into the necessary frame of mind for appearing before Congressional committees reasonably. Second, I think it is possible to learn a few things and use them. (X-REF BACK TO PAGE 147 AND FORWARD TO PAGE 698) It appalls me that so many people appear before Congressional committees without giving any thought to the tactics, the history of other people's efforts, and so on, and trying to learn how to do it. I got along all right.

Most of the sessions I appeared before were small sessions, sometimes executive sessions, with no other (?) witnesses present, of course, and none of the public

1) CONGRESSIONAL
TESTIMONY

2) EXPERIENCE HELPS

Reel 2-B and 3-A
Page 150

It's easy to deal with a small session.

But in a big session, with a big audience, on a tense affair, it is not easy at all, and the fireworks are likely to start.

It's very hard to get the show going so that you can really get your points across without getting all balled up. I don't think I was ever particularly good at this phase of it. I did have a recent appearance before Kefauver that I enjoyed, but I also had an experience over in the House that I didn't enjoy at all. (SPECIFY) The techniques of appearing before a small committee in executive session are vastly different from the ones where the whole hearing is in the spotlight.

- 1) CONGRESSIONAL TESTIMONY
- 2) SMALL SESSIONS VERSUS BIG SESSIONS

END OF REEL 2-B