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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

EARLY NASA HISTORY

- - -

Interview with

DR. EDGAR CORTRIGHT

By

EUGENE EMME

- - -

Langley RC

Wednesday, February 20, 1974

(TRANSCRIPT OF TAPE RECORDING)

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P R O C E E D I N G S

(START OF TAPE ONE, SIDE ONE.)

MR. EMME: ~~'74, Ed Cortright. You're not going to say anything --~~ All right, if I quote you I'll run it by you again, so don't worry about it. Did you know George ~~Willard~~ Low (~~Renselar~~)? at Rensselaer?

DR. CORTRIGHT: Yes, we were fraternity brothers.

MR. EMME: Okay, you know all of these things come together, and then, of course, your Lewis work seems fairly straight forward.

DR. CORTRIGHT: We worked in the same division out there. (NEVAR).

MR. EMME: And exactly when did you come to Washington? Do I have that? I don't know.

DR. CORTRIGHT: No, you probably don't. I came down with Abe.

MR. EMME: In April?

DR. CORTRIGHT: Oh no.

MR. EMME: March?

DR. CORTRIGHT: Well, I don't know when Abe came, but I was one of the first two or three people, yes, who came down immediately. I probably was down here within a couple of weeks after he.

MR. EMME: Okay. You and who else where the first to come?

DR. CORTRIGHT: Ed Calligan.

MR. EMME: Ed who?

DR. CORTRIGHT: Calligan; he didn't stay. Newell Sanders, maybe you remember --

MR. EMME: I don't really know, Newell.

DR. CORTRIGHT: He eventually didn't stay. Wyatt, and I'm not sure when Fleming and Sloop followed.

MR. EMME: Later. Remember what your first chores were?

DR. CORTRIGHT: Oh, yes, I do.

MR. EMME: That's really where there aren't many documents.

DR. CORTRIGHT: Yes.

MR. EMME: Where you in on some of these surveys?

DR. CORTRIGHT: Well, let me tell you. You've got a clean sheet of paper? Cause you'll need it.

MR. EMME: How big do you need?

DR. CORTRIGHT: Not long - I'm just going to itemize some. I didn't know whether you wanted to write them or get them on tape here. Let me just list them.

MR. EMME: Just talk.

DR. CORTRIGHT: All right.

MR. EMME: I'll get it.

DR. CORTRIGHT: All right. The first job I had was

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about the Fall to Winter of '57, where I served on a group at Lewis putting together a plan for a space agency.

MR. EMME: Is that the one that comes out in a spiral binding?

DR. CORTRIGHT: I think it was, yes.

MR. EMME: Okay.

DR. CORTRIGHT: Now it turned out the part -- I'm not sure whether Howard Childs headed that up for --

MR. EMME: But that was an organization study, wasn't it?

DR. CORTRIGHT: No -- yes and no. We had a layout of what the programs might be roughly.

MR. EMME: Is that when Purser came on? From --

DR. CORTRIGHT: This was all done before Lewis and Langley and the Centers were interacting very much.

MR. EMME: Okay.

DR. CORTRIGHT: Abe had gone down and talked to Dryden , I believe, and he came back and he said what we really are going to need is a white--what today we call a white paper, a proposal on what a space agency might be. And it might be NACA. So we sat down and we drew up a plan for a space agency with a new Center and launch sites and, you know, we had --

MR. EMME: Yes, I have copy No. 1. The copy that went to Dryden.

DR. CORTRIGHT: Okay, it's probably pretty primitive

you know, but we --

MR. EMME: It was sort of a little AEC.

DR. CORTRIGHT: Yes, but I can remember, for example, going out and studying what ICBM test launch complexes looked like simply so we could have drawings that made sense.

MR. EMME: Right. You were starting from scatch.

DR. CORTRIGHT: Were starting from scatch. We put in things, for example, how we would launch nuclear rockets. And we were going to do those, I worked on that personally, and we were going to launch them from the Gulf, out in the water.

MR. EMME: Who would you say was the Chairman, Childreth?

DR. CORTRIGHT: Well, I don't know whether it was Howard Childs --

MR. EMME: Whoever it was, it is ~~(Dahlgren)~~ not documented now.

DR. CORTRIGHT: It may have been Howard Childs and I might have been co-chairman. I was one of the leaders of the group, but I don't think I headed it up. I think Howard did.

MR. EMME: Okay.

DR. CORTRIGHT: In any event, we put that thing together. Abe had a lot of his own personal touch on it, as he always does. Now, that thing went down to Washington, and as far as we knew disappeared.

MR. EMME: In Dryden's commode.

DR. CORTRIGHT: Some place like that.

MR. EMME: I asked him what happened to them and he said nothing. This is copy No. 1.

DR. CORTRIGHT: Yes. Okay, in any event, --

MR. EMME: I will explain why when I write up the relationship ~~you~~ he had with ~~Kilyon.~~ Killian.

DR. CORTRIGHT: Okay. Shortly, thereafter, though Abe was asked to come to Washington and prepare a space program for the country which we may or may not be asked as an agency to handle; and I recall it being about January, but I don't quite remember anymore. So, --

MR. EMME: Well, don't worry about --

DR. CORTRIGHT: -- it was quite interesting as a sidelight because my wife and I had just moved into a new house about a month before, and I came home and said, "Well, how would you like to go to Washington?" and she was a little shocked but the next day I told Abe we'd do it. Now, my first assignments, and I even think this assignment preceeded going to Washington, but in that Winter time period I was part of a site selection team for Goddard.

MR. EMME: Oh, you were.

DR. CORTRIGHT: And that was headed up by Parsons, Jack Parsons, of Ames.

MR. EMME: Why did he always get the site job? He had --

DR. CORTRIGHT: I don't know.But he headed it up and I was on it and I think ~~Trazinski~~ Truszynski may have been on it; I'm not sure. We toured the -- mostly the West Coast and-- we actually found the -- I've got to say it right -- we toured the West Coast looking for a site that launched to the West or to the South because we weren't very interested in polar orbits. We also did --

MR. EMME: Was the Air Force interested?

DR. CORTRIGHT: Well, -- no -- more then that, meteorological -- many of our satellites are polar now, as you know, meteorological,any of the earth observational stuff.

MR. EMME: And did you look at Point Arguella and Vandenburg.

DR. CORTRIGHT: Yes, I was out there climbing around those mountains.

MR. EMME: And this was when,now?

DR. CORTRIGHT: Well --

MR. EMME: July?

DR. CORTRIGHT: I don't remember; I really don't.

MR. EMME: These papers, I haven't found; they may turn up yet, but --

DR. CORTRIGHT: Incidentally, one reason I was put on that group was part of the Lewis submission to Dryden, finding the launch -- finding the site for a new lab and sort of laying it out was my job.

MR. EMME: I see the authorization hearings were held in August for Beltsville, so these had to be earlier.

DR. CORTRIGHT: I know. It had to precede that. In any event, I had surveyed maps of the United States and I'd sort of located the following places in the previous November time period. I think it was ~~(Oseba~~ Assateague Island) down off Georgia. See, we were looking for a place that could take nuclear rockets, and you needed a 50 mile exclusion radius. A sub island of Georgia; what's that island off the east coast of Texas, the long slanted one?

MR. EMME: Mustang Island? Near Mustang.

DR. CORTRIGHT: I can't remember.

MR. EMME: It's north of Corpus Christi.

DR.CORTRIGHT: Yes, just -- the King Ranch area.

MR. EMME: Kings -- well, I flew out of Corpus Christi.

DR. CORTRIGHT: Well, you know they're so small. It's now become abig resort area, but it runs almost the whole -- Padre Island.

MR. EMME: What?

DR. CORTRIGHT: Padre Island.

MR. EMME: Yes, Padre Island.

DR. CORTRIGHT: We looked at that heavily. We, of course, looked at Cape Canaveral and we looked up at Vandenberg, and then we went all the way up south of San Francisco into an army reservation up there.

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MR. EMME: ~~(Arrcut)~~ Camp Cook?

DR. CORTRIGHT: Can't remember an ~~Arrcut~~ Camp Cook. Okay, but when we came back, Dryden looked at all our findings and he said, "Being practical, you'll probably have to use Canaveral, and what's wrong with right out here at Beltsville?" So our last stop we toured the Beltsville area. He thought he could get it for nothing.

MR. EMME: They offered it.They thought you did research on land and they found out you did agricultural research in the laboratory.

DR. CORTRIGHT: Yes, well in any event, we got that.

MR. EMME: And everybody in Vanguard he thought lived in Maryland, which was wrong. Most of them lived in Virginia.

DR. CORTRIGHT: Okay, that was one of the early jobs I did. Then right after that, I negiotiated, and I think this was all after we were formed, I was made --

MR. EMME: I want to get to the weather satellite.

DR. CORTRIGHT: I'm going to come to that. If I'm taking too long,tell me, but I was made head of advanced technology in the pre-NASA organization and I was in charge of, I'm not even sure I had a title then frankly, but Abe made me in charge of meteorological -- essentially application satellites and I had --

MR. EMME: -- wasn't really used then, I guess.

DR. CORTRIGHT: No, it wasn't, but had meteorology, communication, navigation, and geodesy and miscellaneous technology,like guidance and control and power.

MR. EMME: Was Crecker with you on that guidance -- at all?

DR. CORTRIGHT: Not at the Center, he came shortly, thereafter.

MR. EMME: Okay.

DR. CORTRIGHT: In fact, that was his job.

MR. EMME: He's still shaking his head about it.

DR. CORTRIGHT: What do you mean?

MR. EMME: Well, he just said he had the guidance and control; he was the first man. And I said,"Well, what did you do?" you know, and he didn't say anything.

DR. CORTRIGHT: Well, that was debatable,what we did.

MR. EMME: Yes, well --

DR. CORTRIGHT: We were trying to fabricate a program out of nothing, and I'll say this for that team that Abe put together. We really put together a program that had all of the ingredients in it, or most of them.

MR. EMME: And when does Stoller come in? Later?

DR. CORTRIGHT: No, he came before NASA was started.

MR. EMME: Did he?

DR. CORTRIGHT: He came in that Spring period.

MR. EMME: He's one of the great people I don't dare

forget.

DR. CORTRIGHT: No, he's ~~traffic.~~ terrific!

MR. EMME: You know, he took the time to educate even me in the hallway, you know.

DR. CORTRIGHT: Jaffe came down in that Spring or Summer period and took over.

MR. EMME: In '58?

DR. CORTRIGHT: Oh, I'm not sure when he came, but he took over communications when he came down. I didn't have to worry about that so much,anymore.

MR. EMME: That gets a little later.

DR. CORTRIGHT: Maybe he did.

MR. EMME: But still I don't know for sure, I meant to ask Connie that.

DR. CORTRIGHT: One of things that stands out in my mind, I gave the first public speech --

MR. EMME: You mentioned that --

~~(Inaudible.)~~

MR. EMME: Well, you said Silverstein asked you to give this speech, was it to the ARS or IAS?

DR. CORTRIGHT: AIAA.

MR. EMME: AI~~AA~~- well, there wasn't any AI~~AA~~ then.

DR. CORTRIGHT: No, it was the --

MR. EMME: So it would be ARS or the IAS.

DR. CORTRIGHT: No, it was the IAS. What did we use

to call it?

MR. EMME: The American Rocket Society or the Institute of Aerospace Science. Those two combined became AIAA.

DR. CORTRIGHT: The Institute of Aeronautical Sciences; it wasn't Aerospace at the time. It was the Institute of Aeronautical Sciences - IAS.

MR. EMME: All right. Did you ever find the speech?

DR. CORTRIGHT: No. I think I have a newspaper at home where it was written up, but --

MR. EMME: It was in the Washington paper?

DR. CORTRIGHT: Yes, well, that one that was the biggest coverage was in the Cleveland Press, it turned out, but --

MR. EMME: But the meeting was in Washington?

DR.CORTRIGHT: Yes. The guy -- the reporter who covered it and who sort of eavesdrops some of these projections of when we were going to do things was Verne Haughland.

MR. EMME: He covers everything.

DR. CORTRIGHT: Yes.

MR. EMME: He just quit last year. He covered everything in town, all the time I've known him since the beginning. Well, look, even the (~~artic~~ article) clipping would be Verne Haughland's; filed as an AP.

DR. CORTRIGHT: Yes. Yes.

MR. EMME: Okay, I'll call him up and he'll handle it for me.

DR. CORTRIGHT: That's sort of interesting. Because it covers some things --

MR. EMME: Well, now your projections came out of the basic program as it had evolved from the early stages.

DR. CORTRIGHT: Oh yes, Tischler worked most with me on that speech, but that's a detail--

MR. EMME: Well, you said there's a man in orbit in three years.

DR. CORTRIGHT: Seven to ten to the moon and 15 to 20 to Mars.

MR. EMME: That wasn't too far off for then.

DR. CORTRIGHT: It was close and we might even have made it to Mars if we'd tried.

MR. EMME: Now, you didn't like the publicity or Abe didn't like it or what?

DR. CORTRIGHT: I didn't like it . . . I was embarrassed.

MR. EMME: Why?

DR. CORTRIGHT: Well, it seemed so Buck Rogerish. We didn't even have a program to go to the moon. You know.

MR. EMME: All right.

DR. CORTRIGHT: In our presentations to Congress, we never talked about going to the moon, in those days, with men. No way. That came up a year or so later. So it just seemed premature and I felt I'd embarrassed the agency.

No one was too worried, you know Abe won't worry too much about things like that.

MR. EMME: Do before you talk. That was the prevailing view.

DR. CORTRIGHT: Now look, about toward the end of that period, I was working personally most on the meteorological program.

MR. EMME: Well, there's six million for weather reconnaissance in the March draft estimate for weather satellite, developed down here, and then sent into Dryden. And the transfer --

DR. CORTRIGHT: I'm not sure I ever saw it -- I didn't ever see any material from Langley on weather satellite and I just --

MR. EMME: Well, it's just a number in --

DR. CORTRIGHT: Okay.

MR. EMME: -- the first rough program, breaking out areas of program.

DR. CORTRIGHT: You, of course, have the presentation we made to Congress that summer.

MR. EMME: Oh yes, right.

DR. CORTRIGHT: I worked on those.

MR. EMME: Now, did you get tied in then with these joint meetings with ARPA.

DR. CORTRIGHT: Yes, very much.

MR. EMME: (Valleywage) and (Garner) and . . .

DR. CORTRIGHT: In fact, I was the one who recommended to ~~Lanhan~~ Glennan, wait a second, I don't want to say that wrong. I think ~~Lanhan~~ Glennan asked me in a meeting whether maybe we should take over TIROS and I said yes and he very quickly called Roy Johnson; was it Roy Johnson?

MR. EMME: ~~(Hartman).~~ ARPA?

DR. CORTRIGHT: And within a week, I think, Johnson was over there and Glennon negiotiated that thing out of him right on the spot. Prior to that I'd been running around with Roger Warner of ARPA who was the TIROS program manager. And that's where I learned a little bit about how things work in ARPA.

MR. EMME: Was Wechler the chief man of the Weather Bureau at that time?

DR. CORTRIGHT: Yes, he was -- no, Reichelderfer for a bit -- Wechler -- that's another part of a story. I think I can take a little credit for this.

MR. EMME: All right, let me get that.

DR. CORTRIGHT: I helped convince the Weather Bureau by working with Reichelderfer and Wechler to opt for meteorological satellites, and there was a whole branch in the Weather Bureau who didn't want anything to do with them; and I think NASA really pushed, and we found two main friends in the Weather Bureau.

Reichelderfer for himself was receptive; Wechler and Dave Johnson were enthusiastic; and we struck up a

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friendship; and I worked very closely in the days of TIROS even when it was in ARPA with Wiesner and Dave Johnson, and then we invented NIMBUS, Bill Stroud and I, out of thin air when we were putting this program together.

MR. EMME: Oh, wait a minute -- on the transfer of TIROS you have to, besides the ARPA posture on this and the background in (Janus-2) in Huntsville, which then becomes TIROS. And then swinging it -- when is it swung into the THOR booster? Do you know that story? Does that come after TIROS comes to NASA? See it was scheduled for a so-called JUNO under the Janus ABMA program.

DR. CORTRIGHT: No, it was headed --

MR. EMME: -- program.

DR. CORTRIGHT: -- it was headed for a THOR ABLE.

MR. EMME: Right away?

DR. CORTRIGHT: Before we got it, I'm pretty sure.

MR. EMME: So that was an ARPA decision?

DR. CORTRIGHT: Yes, I think so.

MR. EMME: By see Stroud --

DR. CORTRIGHT: Frankly, let me say this, the TIROS program was well defined and underway --

MR. EMME: Oh, yes.

DR. CORTRIGHT: -- before it came to NASA and we did very little to change in its first form.

MR. EMME: Except Stroud and company wanted to get

out of the army (signal) Corps.

DR. CORTRIGHT: Well, that's right. I made two or three trips to Fort Monmouth to try to help that negotiation.

MR. EMME: It was very difficult.

DR. CORTRIGHT: It was difficult because there were personal feelings that had been hurt, and so there were so little by-plays on TIROS as to whether or not it should carry infra-red sensors and the ~~Same~~ Sonmi

MR. EMME: Heat Budget . . .

DR. CORTRIGHT: -- Heat Budget Experiment because it had failed to work properly on the Vanguard, but those are sort of details.

MR. EMME: I think I can get -- but the THOR, I didn't know when that came in and apparently --

DR. CORTRIGHT: I'm not sure either.

MR. EMME: -- it's an ARPA swingover. Because the Air Force was preeminent in the whole decline of ABMA in the DOD side of the booster picture. And the ARPA thing is fairly straightforward when it takes place, which is a little later than some of the other transfers.

DR. CORTRIGHT: Yes.

MR. EMME: Well, I guess the other part of the ARPA story before we get to the TIROS story, before we get to NIMBUS, which is very important, is the declassification of the high-resolution camera when the photographs started

coming.

DR. CORTRIGHT: Yes.

MR. EMME: Where you in on that?

DR. CORTRIGHT: Yes, I was in on the discussions on it; I don't remember exactly how it came about. They weren't all that high-resolution.

MR. EMME: The negatives were fuzzy then.

DR. CORTRIGHT: No, but you couldn't see -- you couldn't do a reconnaissance with them anyway. Was it good for a tenth of a mile?

MR. EMME: Well, Stroud thinks this is one of the greatest coups of NASA was to --

DR. CORTRIGHT: Declassify the --

MR. EMME: -- persuade the CIA that all photographs would be declassified. You know, to get this program clearly in the open, all the way, and there may have been some other classified portions on the TYROS ~~PAYO.~~ payload.

DR. CORTRIGHT: I think the the high-resolution camera was good for a tenth of a mile.

MR. EMME: But they met at Glennon's apartment the day they had the first big handful of pictures. And either the agency men came there, or they got together in a staff car and went out to Langley.

DR. CORTRIGHT: Well, that's an interesting point from my point of view. I was transferred -- I took over

luner and planetary, just before the first flight --

MR. EMME: Right, right, I noticed that.

DR. CORTRIGHT: -- flight of TYROS.

MR. EMME: I noticed that.

DR. CORTRIGHT: And I was driving back from the Cape. I don't remember why I was down there, but I was down there with my wife and I was driving back the day of the first TYROS launch. And the first TYROS picture I saw was in the newpaper.

MR. EMME: Okay.

DR. CORTRIGHT: But prior --

MR. EMME: That explains that then?

DR. CORTRIGHT: Yes.

MR. EMME: Okay, well don't worry about that then. This is part of the development of an open agency, you know, the same fight down at the Cape on launches. Herb Rosen was declared persona non grata on the Guordo monkey flight when he was insisting this, even though it was an Army mission, was being launched under the aegis of NASA and, henceforward, you know, the press should be allowed to watch.

DR. CORTRIGHT: Yes.

MR. EMME: Of course, they couldn't even cover the missile launches, you know. It was just matter of sitting down in the sand. You know, to me, this is the whole thrust of the developing of an open agency, peaceful uses, and --

DR. CORTRIGHT: In that time period, by the way --

MR. EMME: Now, NIMBUS is another --

DR. CORTRIGHT: Do you have a copy of that report we put out? I was chairman of a group; Bill Stroud was on it as to what the operational -- it was called the National Operational Meteorological Satellite System Report, NOMSS or something like that, and that's where we debated -- had the big debate on whether there should be a NIMBUS at all. You ought to have --

MR. EMME: Well, I'll look that up.

DR. CORTRIGHT: That's significant.

MR. EMME: And that's dated --

DR. CORTRIGHT: No, that's that --

MR. EMME: Bill Stroud has good files, so --

DR. CORTRIGHT: I know he'll have that one.

MR. EMME: So he'll have --

DR. CORTRIGHT: I used to keep that myself.

MR. EMME: Do you remember the approximate date -- that would be mid-'59.

DR. CORTRIGHT: Yes, I guess so.

MR. EMME: Because your lunar and planetary job begins in --

DR. CORTRIGHT: Late '60 wasn't it? I don't remember.

MR. EMME: January, '60.

DR. CORTRIGHT: January, '60?

MR. EMME: Yes, so that's really before --

DR. CORTRIGHT: All right, so that would be mid-'60s.

MR. EMME: That's before TIROS was launched, see.

DR. CORTRIGHT: Yes, all right. I don't know when it was in '59. And I think it was --

MR. EMME: Like you say, the program was pretty well configured --

DR. CORTRIGHT: Yes.

MR. EMME: -- by the time NASA got it.

DR. CORTRIGHT: On TIROS?

MR. EMME: Yes.

DR. CORTRIGHT: Yes.

MR. EMME: Well, now, NIMBUS is one of these difficult, historical projects because it becomes so controversial later, and I guess, some of it stretches right into ERTS.

DR. CORTRIGHT: Yes, well I know all - I know quite a bit about that still, I think, because I can almost remember the bar Stroud and I sat in, where we debated what NIMBUS should be and should there be one. You recall very early, Gene, in 1958, I think, what was the -- when was the -- yes, October -- October, '58 -- was that next?

MR. EMME: Sputnik was October 4, '57.

DR. CORTRIGHT: When was NASA's creation date?

MR. EMME: First of October, '58.

DR. CORTRIGHT: '58, Okay.

MR. EMME: A year later.

DR. CORTRIGHT: It was in '58 that we identified the need for the TYROS low altitude type satellites in polar orbit, something in -- I'm not -- the NIMBUS-type satellite in polar orbit, and the SYNCHRONOUS meteorological satellite. I remember drawing, personally drawing, the chart to illustrate that concept, which was used in Congressional testimony.

MR. EMME: That would be the January, '59, the first ones I heard.

DR. CORTRIGHT: Yes, and we showed that, arranged for it

MR. EMME: Or late '60s.

DR. CORTRIGHT: Now Stroud and I got together and cooked up what this polar orbiting satellite ought to be. And we made a trip, I can remember, out to Lockheed to talk about gravity gradiant. We were trying to decide whether to have gravity gradiant in it; and, ultimately, came out with something like the way it was. And subsequently, of course, NIMBUS got into all sorts of controversies and this report I referred you to, where we studied what the National Operational System ought to be, there was a large debate on whether it should have a NIMBUS in it at all. And, I argued strongly for it, even though it was expensive, because it would carry the payload you needed and it was stable all that.

MR. EMME: The first ten TYROS were all successful.

MR. CORTRIGHT: That's right.

MR. EMME: In the meantime, -- meanwhile, --

DR. CORTRIGHT: I'm not sure, it was the best decision, but that's just the position I took on it. Subsequently, these (tosses) were very useful operationally and the NIMBUS was ruled out in the subsequent years as the operational satellite; it became an R and D satellite and went on to become the ERT's carrier.

MR. EMME: Right.

DR. CORTRIGHT: So it's been a useful spacecraft, but it never turned out to be what we originally envisioned it namely, the operational polar orbiting satellite for meteorology. It didn't -- it was too big and expensive. But, that's what we thought it was going to be when we invented it.

MR. EMME: Well now, did you get much involved in the COMSAT business in this early period?

DR. CORTRIGHT: Now about that time, Jaffe was on the scene.

MR. EMME: I see.

DR. CORTRIGHT: And Jaffe worked for me.

MR. EMME: Of course, Echo came right out of the IG-Y experiment, that busines with O'Sullivan.

DR. CORTRIGHT: Right. Right. But Jaffe worked for me and Jaffe was so good a leader that he really carried the

ball. And I was his boss, but I didn't have a major influence on him, I don't think. He really was personally responsible for that work and worked directly with Abe, rather then through me on most of it.

MR. EMME: Now the policy side on COMSAT is largely the Bob Nunn, Glennon story, isn't it? Did you get involved with AT&T, BTL --?

DR. CORTRIGHT: Very little.

MR. EMME: Telstar --?

DR. CORTRIGHT: Very little. Even though it was under me.

MR. EMME: Because that policy was thrust up to the White House --

DR. CORTRIGHT: Frankly, Gene, about that time, I was mostly meteorolgoy.

MR. EMME: . . . (Inaudiable.)

DR. CORTRIGHT: TYROS and NIMBUS and what we called EROS --

MR. EMME: Right.

DR. CORTRIGHT: Did you ever hear EROS -- that was the Synchronous one. And I was all wrapped up with the Weather Bureau getting that -- helping to get them set up.

MR. EMME: Okay. Now the Ranger program was pretty well --

DR. CORTRIGHT: Before we shift I want to throw

into two miscellaneous items, --

MR. EMME: Okay.

DR. CORTRIGHT: -- that were sort of interesting. I did negotiate the transfer of the Vanguard group to NASA. I was head of the negotiating team on that.

MR. EMME: And now herb -- rosen and newell were already in that?

DR. CORTRIGHT: Yes.

MR. EMME: So this was the Townsend group?

DR. CORTRIGHT: It was -- yes, and --

MR. EMME: And Hagen?

DR. CORTRIGHT: Hagen? I guess Townsend was there, a guy by the name of --

MR. EMME: Well, Townsend wasn't Vanguard, see, that's the --

DR. CORTRIGHT: John Walsh -- there was a John Walsh, who was deputy to Hagen, I think.

MR. EMME: But the Townsend group isn't the Vanguard group.

DR. CORTRIGHT: No, Townsend --

MR. EMME: That's the NRL group that had to resign and come in in November.

DR. CORTRIGHT: No, just the Vanguard group, I did.

MR. EMME: Okay.

DR. CORTRIGHT: And also the Monmouth group with --

which we mentioned earlier.

MR.EMME: But those don't really happen until November.

DR. CORTRIGHT: I can't remember the date.

MR. EMME: Yes, it took that long. But, both Miller and Rosen --

DR. CORTRIGHT: They were just miscellaneous jobs that I did. The last big meteorological thing I did was that National Operational Systems stuff.

MR. EMME: Okay, I want to look that up. I remember seeing that; I may have a copy of it.

DR. CORTRIGHT: It's a thin spiral binding also.

MR. EMME: Yes, but it's the origin that would apply on those things and the consequences.

DR. CORTRIGHT: That document has a lot of the thinking in of the group on how the whole system, ultimately, would get.

MR. EMME: And it was virtually -- well, that first international meeting was held late '60, wasn't it; already they were training read-out people.

DR. CORTRIGHT: I don't remember. Oh, that was another side of the story. The net that went with the meteorological system. They -- and, of course, I was involved in that. Then along about that time, that's when ABe asked me to do the -- put the lunar and planetary program together, we really

didn't have one, and we --

MR. EMME: Well, you had the Al Hibbs paper; you had the Jestro Committee.

DR. CORTRIGHT: That's right. But, we didn't have an office or no real integrated program, it was . . .

MR. EMME: Jestro was not interested in management, I take it.

DR. CORTRIGHT: No. I don't remember how it was even handled in headquarters; it was almost a hip-pocket operation.

MR. EMME: Well, Newell had Space Sciences, such as it was and . . .

DR. CORTRIGHT: That's right, he --

MR. EMME: . . . there was this full-spectrum study of how you start out with classes of missions --

DR. CORTRIGHT: What was that JPL report?

MR. EMME: Number one. JPL Report Number -- NASA Report Number 1.

DR. CORTRIGHT: No, there was JPL plan --

MR. EMME: -- dated about November, '58.

DR. CORTRIGHT: There was a JPL Planning document that had a different number on it; I don't remember what it was. It was a yellow or --

MR. EMME: It was the Hibbs -- it's the Hibbs.

DR. CORTRIGHT: I think it was Hibbs, yes.

MR. EMME: I may be wrong on the number, but the three lunics in '59 pretty much got the Ranger Program --

DR. CORTRIGHT: Moving.

MR. EMME: -- specified, and --

DR. CORTRIGHT: There are a number --

MR. EMME: --and you come in right early January when the program status was --

DR. CORTRIGHT: Just forming.

MR. EMME: -- just beginning.

DR. CORTRIGHT: Milt Rosen had some input on the Ranger, at the time. What a Ranger should be; I don't remember that too well, but what I set out to do first was to put a team together and to start to formalize the program a little bit.

MR. EMME: Had the blocks been worked out in the planning? Are there six blocks -- well, all of the lunar landings --

DR. CORTRIGHT: On the Ranger?

MR. EMME: -- planetary was one program, was one program, Ranger, wasn't it.

DR. CORTRIGHT: Was one program. Well, yes, I guess so. We had some Pioneers, you know. The TRW staff under --

MR. EMME: Oh, they inherited --

DR. CORTRIGHT: -- John --

MR. EMME: Lindsey.

DR.CORTRIGHT: Lindsey. Yes, that -- I inherited that.

MR. EMME: You inherited that. That was a can of worms.

DR. CORTRIGHT: I had -- I inherited Pioneer and the beginnings of a program that turned out to be Ranger, plus the Hibbs document which showed soft landers later on, right? And that's about what we started with.

MR. EMME: But, I think the Hibbs thing laid the whole thing out in various steps.

DR. CORTRIGHT: It did. It had planetary in there, too, I think.

MR. EMME: The JPL was going to do everything.

DR. CORTRIGHT: It was the best we had, it was pretty good actually. You know, they knew more --

MR. EMME: My first job was to go --

DR. CORTRIGHT: -- then anyone else.

MR. EMME: -- out to STL and I was going to show them how you could do contemporary history which would be helpful to management, at the same time,do the research you need for the oral history. Of course, I didn't know enough about it. I interviewed (Mettler), George Miller, Doolittle,Louis Dunn. There had been practically blows in the blockhouse between Abe Silverstein and the STL people. The one that Abe says,"Take it down, it doesn't check it out, take it back to California,

shake it and test it. The payloads got to work before you launch." And they said, "Well, let's launch it, we'll learn something," you know. And, I've got to identify which particular one the stand-down was.

DR. CORTRIGHT: This wasn't set up just for me, was it?

DR. CORTRIGHT: Would it be Friday?

: Well, of course, they're waiting right now.

DR. CORTRIGHT: Didn't -- They said now --

: (Inaudible.)

DR. CORTRIGHT: Because about an hour ago, I decided I couln't do it.

: I just found out about it.

DR. CORTRIGHT: She'd scheduled it, I guess. I don't remember scheduling it.

: Yes, we set it up for your convenience, yes.

DR. CORTRIGHT: Yes, it isn't going to work out today.

: All right, is it possible you can come over later maybe, or join us later?

MR. EMME: We'll probably be done in 10 or 15 minutes.

DR. CORTRIGHT: Yes, but I have an hour -- I maybe

mw30

could come over, like, at 4:00, if that's worth it for an hour or 45 minutes.

: Yes. (Inaudiable.)

DR. CORTRIGHT: I can do that.

:Or if not, maybe we'll try to reschedule a shorter version for you. Okay?

DR. CORTRIGHT: Bob.

: Yes.

DR. CORTRIGHT: If it's pertinent for what I'm getting ready to do, I'd like to do it. So, if I don't do it today, why I'll come over Friday.

: Well, let me review what they're saying anyway, and if you can't make it today and it looks very good for your Congressional office, we'll reschedule it.

DR. CORTRIGHT: All right.

: I think this is the meat -- I'm hoping this is the meat of what we're going to be doing here now. I haven't thought of --

DR. CORTRIGHT: Barbara. You had something on after LTV. Is there? I can come over around 4:00. Why don't you call back and tell me whether you want me to, or you'd rather have me come Friday?

: You'll be able to spend, what, an hour or two Friday.

DR. CORTRIGHT: Yes.

: (Inaudible.)

DR. CORTRIGHT: All right, tomorrow or Friday. Just today's not good. I've been away a week, and I'm way behind, and I've got to get some things done.

: All right, let me talk it up, and we'll work something out.

MR. EMME: Why don't I rifle-shot some questions? I think the Ranger planning is pretty, pretty good, although, what is your recollection about the impact of the Sputnik? On NASA headquarters? Or the lunics, excuse me; you had the three missions. You had the impact mission of the Russians. They said, right after Sputnik, they're going to the moon --

DR. CORTRIGHT: Well, Ranger was already a going program when the lunics went, as I recall.

MR. EMME: No, No.

DR. CORTRIGHT: No?

MR. EMME: The first one was in January, '59 --

DR. CORTRIGHT: Oh, the one that went around behind the ~~sun~~ moon?

MR. EMME: The second one is in the middle of September, '59, and the one that bought pictures of the back-side is November, '59.

DR. CORTRIGHT: Yes, but --

MR. EMME: And Ranger is going in December.

DR. CORTRIGHT: Ranger got kicked off in December.

MR. EMME: '59. As a program.

DR. CORTRIGHT: Okay, I'm sorry --

MR. EMME: My chronology may be wrong, but the way the record reads, you see, well boy, here's the real Russian initiative, and even though this planning went underway in October '58, the Hibbs thing was set up.

DR. CORTRIGHT: Okay, that's sort of --

MR. EMME: And their thinking went way back, as well as some of the other thinking. And, of course, the ~~gerry~~ jury-rigged program, as Abe called them, the transfers from ARPA which were the JUNO's and the Air Force THOR and, of course, the ATLAS A booster. They just weren't working out.

The launch rate was bad and all that came out of that was Pioneer 5, which resulted after this confrontation in the blockhouse between Abe and the STL people, either in November -- October or November, '59. But, the launch record and the results were not very profound. Of course, poor Lindsay's gone, you know.

DR. CORTRIGHT: ~~(Inaudible.)~~ A loss.

MR. EMME: That was really a difficult arrangement when the Air Force, for all practical purposes was the major contractor of NASA in the space program. You know, that was just the way it was inherited. And if they had been successful, you might wonder if the NASA program might have developed quite

differently. But, the missile launching philosophy just didn't work properly for Space science. Pioneer 5 was a huge success, but that was because "NACA" managers said, "You know, get that pay-load checked out." Am I wrong in that generalization?

DR. CORTRIGHT: No, that's generally right, I don't remember the timing, very well.

MR. EMME: But the Juniors sort of really seemed to thrust -- there's a direct correlation between the Juniors and the NASA hard-core planning on Ranger.

DR. CORTRIGHT: See, then, I was still doing meteorological work --

MR. EMME: Right.

DR. CORTRIGHT: -- then, so I don't quite remember that.

MR. EMME: So, by the time you come in in January, why the thing is pretty, pretty good --

DR. CORTRIGHT: Well, still there were a lot of uncertainities as to what Ranger would be.

MR. EMME: Well, the -- the blocks or steps further down the line were -- still had to be defined. What was a hard-lander -- you know, the balsa ball --

DR. CORTRIGHT: Yes, sure.

MR. EMME: But I guess the Juniors were just not directly involved with meteorology and the things you were in -- but Homer remembers them, but that's sort of the standard ques-

tion like, "Where were you when Sputnik happened?"

Down here at Langley, it's regarded as a political event, because they were already working on space. O'Sullivan, and Fagerle and, you know, they were getting ready to support the Air Force in its endeavors. If not, do something on their own by the time Sputnik came along.

Okay, let me -- what can we say about Mort Stoller, now? I -- you were pretty close to him and he's credited here by Floyd Thompson, with having really introduced the computer to the Langley instrumentation and --

DR. CORTRIGHT: I don't know anything about that -- more --

MR. EMME: Well, that's before he came up to hers.

DR. CORTRIGHT: Mort Stoller, the first I remember him is when I tookover lunar and planetary, and set that office up. I think Mort came in about then and took what amounted to, applications.

MR. EMME: Is that right?

DR. CORTRIGHT: And I think that timing was about coincident, but I'm not sure. When did Mort come to Washington?

MR. EMME: I'm not sure.

DR. CORTRIGHT: What I'd rather talk about for a minute is --

MR. EMME: Okay.

DR. CORTRIGHT: -- so you can come back later and

get some highlights of it is what I thought were the highlights of my time in lunar and planetary, since it was only a couple of years, and then I went on to be deputy to Newell.

MR. EMME: Okay.

DR. CORTRIGHT: One was the definitizing of the Ranger specifics, plus going through all of the failures, the review boards, the reworks, and ultimately a success. Three successes. That, of course, I was up to my eyeballs in.

During that same period of time, we took what JPL had said would be a lunar -- a possibility of a lunar soft-lander and we came up with the Surveyor concept, which we put on a paper, Atlas Centaur.

And I can remember working with (Norwiski) on that, more than anyone, because we were, you know, back to the enveloping payloads and weights and doing all of this and trying to get comfortable with the idea that it could really be done.

I think, putting the office together was significant; for example, sorts of people I bought in included ~~the~~ (Nicks) and Chuck Sonnet, I inherited Gary Shilling --

MR. EMME: But he was just around ~~the pile~~ a while.

DR. CORTRIGHT: Yes, I bought Fred (Katchendoffer) down. Yes, Sonnet I hired to replace Shilling, but my key people were Nicks on Lunar, and Sonnet on Planetary.

MR. EMME: Sonnet came from Lewis?

DR. CORTRIGHT: Who?

MR. EMME: Where did Sonnet come from?

DR. CORTRIGHT: TRW STL

MR. EMME: That's right.

DR. CORTRIGHT: STL. And we put together a team of about -- probably about 15 to 20 --

MR. EMME: That's right. That's what I meant.

DR. CORTRIGHT: And that's sort of the office -- that the Headquarters side of this job. One thing I did, personally, because it was sort of fun was name all of those missions. That is the Surveyor, and Mariner, and we had a Voyager at the time.

MR. EMME: ~~Right her,~~ I reminded Abe Silverstein of an old stupid dog.

DR. CORTRIGHT: Yes, and I can't -- I think JPL picked the name Ranger.

MR. EMME: Yes, nobody liked it.

DR. CORTRIGHT: No. Well, you know, maybe that's what kicked us off, but we picked nautical names for planetary.

MR. EMME: I sat in on one meeting of that naming committee and it was already locked in.

DR. CORTRIGHT: Ranger was?

MR. EMME: Well, Ranger was already locked in and the idea of nautical for --

DR. CORTRIGHT: Nautical for planetary, and Explorer

type for lunar, like ground survey exploring.

MR. EMME: Surveyor?

DR. CORTRIGHT: Surveyor.

MR. EMME: And Ranger --

DR. CORTRIGHT: See, we had a Prospector also, which never --

MR. EMME: Right.

DR. CORTRIGHT: -- survived but we invented the Prospector also. Now, the lunar orbiter began under my reign, if you want to call it that, as a Surveyor orbiter. And later on when Hughes had so much trouble with the Surveyor lander, I was then -- by then I'm working for Homer as his deputy and we switched to Langley, and the lunar orbiter was finally done.

Now, another highlight, was the -- did I talk to you about the Centaur, the challenge to Centaur, the Von Braun challenge and whether Centaur survived or not?

MR. EMME: No.

DR. CORTRIGHT: That's very significant, because Centaur's been a pretty important vehicle to us. But, we had picked Centaur for the Surveyor and for the Mariners, the later Mariners, and we decided we had to ge bigger the Aegean and Von Braun came along when Surveyor was in weight trouble and said we ought to cancel Centaur and put these on a Saturn Aegean, and that was a very hairy operation for a while and it

culminated in a confrontation between me and Werner and (Eberhart) down at Huntsville. I think, I was in charge for Homer of making a recommendation to the administrator of what we ought to do and --

MR. EMME: Well, see Werner never did have his payload.

DR. CORTRIGHT: No.

MR. EMME: Never did. Until they invented the Pegasus and they had, what I called, sand-pile one and two; just fill it up with sand.

DR. CORTRIGHT: Well, in any event . . .

MR. EMME: Do you remember when this was?

DR. CORTRIGHT: Oh, John Sloop does because that's what he's putting in his history. [1962]

MR. EMME: Okay.

DR. CORTRIGHT: In any event, I decided we should save Centaur and I got together with Abe to see whether Lewis would take it on. I called (Fontain).

MR. EMME: They weren't doing anything on Centaur at Marshall anyways, were they?

DR. CORTRIGHT: Yes, they were managing it sort of.

MR. EMME: (Inaudible.) Right.

DR. CORTRIGHT: (Hans Houter) was the program manager and he was a nice fellow but he didn't have any support from Werner and it was in serious trouble because Craft ~~Arickee~~ was the project manager at Convair and he's an inventor, not a project manager. So the whole thing was a terrific bag of

worms and Abe agreed to take it over, rather than let it die.

Incidentally, Tom Dixon supported us strongly from the administrators office about keeping it alive. As I remember, Ebberhart or Werner down there saying, "Well,"since I was pretty young," This is the biggest decision you've made, or every will." In other words, your neck is really on the line, because they thought Centaur was doomed to failure which it would have been unless Abe took it over and --

MR. EMME: Well, you still had technical problems didn't you?

DR. CORTRIGHT: Oh yes, terrible --

MR. EMME: ~~Was Blase in that?~~

DR. CORTRIGHT: Payload and running out of payload and we couldn't pin that down. It was way off on schedule. It was just not materializing. Well, in any event, I think Lewis salvaged that.

MR. EMME: Well, that stands out in your mind.

DR. CORTRIGHT: Well, it was a very significant event, because the big issures were involved. You know, it wasn't a ---

MR. EMME: Did ~~Mark Lever~~ manage anything that they didn't invent? Or feel that they had invented.

DR. CORTRIGHT: Yes, they did later on the Apollo telescope.

MR. EMME: The Saturn-V --

DR. CORTRIGHT: -- some of the Skylab stuff, the ATM.

MR. EMME: They did?

DR. CORTRIGHT: They like to do their own thing, like everyone else and they're very good at it, but they weren't good at this one because they were all wrapped up in Saturn. Then we started in that same period that I was in charge of that group, the Mariner series and we had quite an elaborate Mariner program, as you know.

MR. EMME: How about Mariner-II? That was sort of a --

DR. CORTRIGHT: Well, that, of course, was --

MR. EMME: -- that was a Ranger, of course. How did that happen?

DR. CORTRIGHT: How did Mariner II happen?

MR. EMME: Yes.

DR. CORTRIGHT: Well, it was scheduled to -- let's see.

MR. EMME: Is there any story there that's --

DR. CORTRIGHT: Yes, there is, because as I recall it the Centaur was going to be ready for the first Mariner's and about one year before Mariner-II, and this is an interesting and human-type story, about one year before Mariner-II we knew the Centaur wasn't going to make it.

(END OF TAPE ONE, SIDE ONE.)

(START OF TAPE ONE, SIDE TWO.)

DR. CORTRIGHT: ~~—job.~~ That's ~~that's~~ a good one. That's still such a headache and our -- for example, our biggest problems on Viking are management, not technical. The subsystems that are in trouble, the worst, are -- were badly managed. It's not that they don't have technical problems. Those quotes are pretty good, I don't feel bad about those.

MR. EMME: Well, how did Abe Silverstein manage? The Space Flight Development Program, which was all the program, the Space Programs.

DR. CORTRIGHT: Abe, of course, is a very -- he's a tower of personal strength. He's technically smart; he's a dynamic, decisive man; if he has a flaw, it's that he is a one-man show, but he's not as much that way as many people think. That is, he will let you -- if he like you, trust you, he will let you do meaningful things,like he did with me.

MR. EMME: Did you talk back to him when you worked for him?

DR. CORTRIGHT: You have to, a little.

MR. EMME: Survival?

DR. CORTRIGHT: Yes. See, he tests you all of the time. He judges whether you know what you're talking about or believe what you're talking about by whether or not you'll fight for your point.

If you fold, he figures you don't know what you're doing. So it was always a case with Abe, where you had to argue with him. He would let out controls very meagerly.

For instance, simple things like writing your own letters. He had the old NACA philosophy at first, that nothing went out that wasn't signed by Abe Silverstein. Just like this Center used to run before I came down here. There wasn't a letter left that wasn't signed by Floyd Thompson and that's 4,000 -- 1600

MR. EMME: -- those of Dr. Reed.

DR. CORTRIGHT: Yes, but Floyd carried it on. See we did it for one year and Floyd did it for seven. Abe did it in headquarters for a while; then gradually the volume of work got so high that was not possible, so we all began to cheat and we'd write all of our own correspondence.

And Abe said, " I know what you're doing," with a twinkle in his eye. He said to keep doing it, just don't make any mistakes. That was his philosophy.

MR. EMME: (Inaudible.) copy.

DR. CORTRIGHT: Yes, but that was generally his philosophy. That he never officially passed out the signature authority and you took it at your own risk, and he expected you to take risks.

MR. EMME: Well, how much lateral relationship did you have, say, with people like George Lowe and people in

other parts of Abes' -- did Abe have staff meetings with all of his division leaders? Where you were in Abes' --

DR. CORTRIGHT: But Abe didn't tend to have formal staff meetings with everyone there. He just went from one meeting to another where he would have people in and work the problem. Never a staff meeting just to have a staff meeting.

If there wasn't a problem to work, the hell with it. And sometimes I think I ought to do more of that down here, but that's the way he worked it.

And then he would rush off with the latest position. He carried, in the early days, almost all the recommendations and positions up to the Dryden-Glennon level personally, and he would take us along to support him and later to give briefings and -- but he made-- there was no doubt who was making the decisions when Abe was there.

Abe made the decisions and we staffed him. No in practice, I think, the decisions by the time we got though setting programs up were, were a fait accompli; but we always went through that formality.

Abe made all of the decisions in those early days. He put his personal torque on the program. When we were roughing out the meteorological program, we had to convince Abe it made sense.

But, if we did good work, he was a terrific guy

to work for. If you do bad work, he's hell -- hell on wheels, but if you're doing good work he gives -- he gave us all a lot of opportunity for exposure -- to the Congress. I went over and briefed Eisenhower one day. [April 27, 1959, 0930]

MR. EMME: Which one was that?

DR. CORTRIGHT: That was on TIROS, on the meteorological satellite program is what it was.

MR. EMME: That would be '59?

DR. CORTRIGHT: Oh, I don't know --

MR. EMME: I have Eisenhower's appointment calendar so I'll find it.

DR. CORTRIGHT: It was an interesting day for me, because --

MR. EMME: I'd like to know the date if --

DR. CORTRIGHT: Well, I can remember Ike, after I got throught describing the system, he said --

MR. EMME: Is this that Space Counsil Meeting? It must have been, because Eisenhower --

DR. CORTRIGHT: It was in the Oval Room there, I think.

MR. EMME: Yes, but Space Counsil Meeting, the President had to preside.

DR. CORTRIGHT: Well, I think the Secretary of State was there. Would he have been there?

MR. EMME: Yes, he could be there.

DR. CORTRIGHT: Okay.

MR. EMME: Dulles was there?

DR. CORTRIGHT: No. It was --

MR. EMME: Or the man with the crutches.

DR. CORTRIGHT: Who followed: I can't remember, I'm sorry. I just don't remember who was there. It was all pretty big, heady stuff for me at the time.

MR. EMME: Well, see, it could be National Security Council, it could be Space Council meeting, it could be just Glennon and his people, talking to whomever was there.

DR. CORTRIGHT: I don't know; I don't remember. But Ike asked a very interesting question and it was about the only thing he said. He said, "If I'd have had these, would I have known there was storm over the North Sea to interfere with the invasion of Normandy?"

And then my answer was, "Yes." And there was no discussion, but it was a significant question. Now, he was never a space buff, but I think that intrigued him.

MR. EMME: That's just what I mean. When you can show interest at the top level and -- see, he's trying to understand and he has to ask the historical, but practical, question and all you did was answer, yes. And that, I think, helps bring the historical to life.

DR. CORTRIGHT: Yes, that might be a good historical --

MR. EMME: I'll let you know the date when I find out on the calendar, because I've got his whole desk calendar and I just haven't had a chance to fit that with my NASA paper.

DR. CORTRIGHT: I think you can take some liberties with the wording of his question.

MR. EMME: I shall..

DR. CORTRIGHT: I didn't state it too well, but --

MR. EMME: I already have. Normandy Landings and --

DR. CORTRIGHT: But he mentioned North Sea, Normandy Landings, satellite, advance warning.

MR. EMME: That would have been over the North Sea.

DR. CORTRIGHT: I think it was. That's why they couldn't find it. The meteorologist, I think, missed on that one pretty bad.

MR. EMME: Well, I'm convinced that that if you don't write a book that's interesting, nobody is going to read it; why write it? And this is the way you can help me.

DR. CORTRIGHT: Incidentally, it's probably after the date, but I can't remember what he said; we took a Mariner-II model over to Kennedy after Mariner-II succeeded. Gave him a desk model, which he later donated to the Smithsonian, but he was quite interested. Of course, he always was a space buff.

MR. EMME: No he wasn't always a space buff.

DR. CORTRIGHT: He wasn't?

MR. EMME: He left that job for Lyndon. He became one very rapidly after the Shepherd flight.

DR. CORTRIGHT: I see.

MR. EMME: And then he almost becomes a space cadet, you know. He appreciated the man that took risks.

DR. CORTRIGHT: The hero - hero syndrome, sort of.

MR. EMME: The PT boat -- (inaudible). Yes.

DR. CORTRIGHT: But, see, all people do.

MR. EMME: And he --

DR. CORTRIGHT: It's like my own wife always had trouble getting intersted in the automated side of the program and was always highly interested in the man and wondered why I didn't want to get into that instead of what I did.

MR. EMME: Space cadet. Well, this will do for now, and I'll call you up if I have questions or write you a letter.

DR. CORTRIGHT: Some of this sort of thing we can do over the phone.

MR. EMME: But I have to get the documents, see the documents give you the date, and the place and what you don't get in the documents, are the quotes, the anecdotes, the interplay of personalities, like you and Ebbenhard, and Werner; I can just see that confrontation on the Centaur. I just thought it was a straightforward case of Headquarters decided that Marshall wasn't going to manage the job.

DR. CORTRIGHT: No.

MR. EMME: And just extracting it, like a bad tooth.

DR. CORTRIGHT: JPL was involved in that, by the way, because they had mixed emotions. They knew the risks of sticking with Centaur, ~~and they --~~

MR. EMME: You want that for your --

DR. CORTRIGHT: No.

MR. EMME: -- files.

DR. CORTRIGHT: No. I don't keep files.

MR. EMME: Good.

DR. CORTRIGHT: I trust people like you to get what's important in.

MR. EMME: Guys like (~~Sabaski~~)?

DR. CORTRIGHT: He does.

MR. EMME: No names, these guys are my --

(END OF TAPE ONE, SIDE TWO.)

C E R T I F I C A T E

I hereby certify that the tape recording represented by the foregoing pages was transcribed by me, or under my direction; that this transcript is a true and accurate record to the best of my ability.

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