

Ed Mohlere (9-20-98)

Q -- a few short stories, anecdotes, vignettes that relate to von Braun. When did you first meet him and was it when you came here or had you known him earlier?

A No. I was the CO of the Detroit Ordnance District at the onset of interest in the Redstone program.

Q When was that?

A That was in -- I got back here from Viet Nam and then went to Redstone. I was five years at the War College -- Army War College -- and before that, I was the CO. Let's see, that's early '50s, I guess. I came here in 1963 direct from Viet Nam. I might add parenthetically here that I made a career out of avoiding assignments to Redstone, mostly because during my Detroit years, I had occasion to visit Redstone, and all I could see was a lot of red mud. It looked to me like an almost impossible situation. I was on my way back from Redstone -- from Viet Nam -- and my orders were changed without my having anything to do about it. Since that was about a 35-hour trip by air, they could do lots with it. John Zierdt was responsible for my coming here as chief of staff. In the Detroit, mid-50s, the Department of Defense, I believe it was, issued a 350 million dollar contract through Redstone to Chrysler to start the Redstone Missile Program, which was designed in mind as the vehicle, the carrier, for a nuclear weapon. It was then von Braun was considered by many as something of a flake, you know, with this space business, but he was resolute, believe me, and I was captivated by his enthusiasm. I got into it and I thought "Why not? It's going to be the wave of the future." So I did all I could to help Werner and his campaign, and that involved some problems with the Department of Defense officials with whom I did business. See, I actually administered that program, because it was in my district, strictly geographic. I think the key moment in my contact with him was a telephone call from him asking if some arrangements could be made for him to deliver this lecture. It just happened that a deputy Director of Defense, Roger Keys -- Charlie Wilson was the Secretary of Defense at that time. Roger Keys used to come back to Detroit frequently. I might say on at least allegedly official business, but he had strong roots in Detroit. See, he was the president of Yellow Coach, which was the predecessor of GMC Truck Division. He was also known and widely reputed as a hatchet man for Charlie Wilson, and he would always, to lend some credence to his trips to Detroit, drop in on me and poke around a bit and then go off. It was kind of an onerous thing. No one likes to have a high-ranking official drop in his operation, because he can always find something. So I called Roger Keys and told him that we had a visitor coming in connection with the Redstone program

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and thought perhaps he would like to get a comprehensive briefing from the man who was behind it all, one Werner von Braun. He decided he could probably spare him an hour or so, so I shot back to von Braun and told him to come ahead and bring his stuff with him. We would furnish the recording equipment and all that. He came in -- I never will forget it. He, apparently, had this as a last minute thing. He just threw all his stuff into a suitcase and he came with a couple of his aides.

Q Slides and what have you?

A Right and supplies. And he gave a very convincing demonstration to Roger, so much so that Keys became a space fan that day. He overstayed his hour by a good bit.

Q And the presentation was on space?

A On the Redstone Missile Program and the background for it.

Q As a forerunner to space launching?

A That's right. He was questioned by Roger Keys at length. Little was known then about propulsion. Roger Keys was intimately familiar with the piston-driven engine, but the rocket engine was something else again. Von Braun did a very good job of that. He came in and he was somewhat tousled and so forth, but he did a wonderful job. That's when I first met him, and when Roger Keys left, I helped him get ready to go back to Redstone. Subsequent to that, I had some difficulties with the Navy over an unused craft, which had been built for the Korean effort, to build engines for the Navy. These were jet engines. Much of the equipment was still in its original condition. The war was winding down now. The Navy was very reluctant to turn this equipment over to what they thought was a rather flaky operation. They weren't alone; there were many that felt that way about it. So I didn't know what to do. I turned to Roger Keys. He had been down there and he knew what the score was. I talked with him on the phone. He said, "Well, I think we can have help there." And we got the plant. We hadn't built rocket engines here, Chrysler didn't, because rocket engines were built, if I am not mistaken, by North American Rockwell on the West Coast. But that's how I got to know von Braun. Thereafter, our contact was quite frequent.

Q And that would have been in the '50s?

A Yes.

Q In the late '50s when you managed --

A Well, let's say mid-50s would be the time. I should have kept a diary of all this. It's kind of historic stuff in a way. But he was a man with a driving force. It was very evident in everything he did. Then, of course, came the man in the moon in this decade, that was the schedule that he had, and he was going to make it come hell or high water. His every effort after that -- his crew was now stationed at Redstone in a going

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(operation -- was dedicated to that. "we have a commitment to put a man on the moon in this decade and we are going to meet it." Of course, few believed that. But the work went on. He convinced Medaris, who at that time was scheduled for the Ballistic Missile Agency, of the viability of this program. Medaris was, of course, an early force in that. You knew him?)

Q Oh, yes. He was, indeed.

A I knew him a long time, of course, being in the service and serving under him. He was the head of the Ammunition Division, so we were not strangers. But he drove that organization hard. I would like to get in a little word about one of the most remarkable things about von Braun and his crew -- mostly von Braun. Just picture the technical capabilities of an extremely rural area, very low on the order of -- one of the remarkable things about von Braun was taking training programs to train people who had small farms in the area and rode around in pick-up trucks and made of them a very competent, highly qualified, technical work force. (making)

tech workers

(scale).

Q Including the prototype manufacture?

A That is exactly right. They were working in dimensions that are almost unbelievable. A millionth of an inch here and there was quite important. Of course, he was the driving force behind the establishment behind the technical center out at Redstone Arsenal, which later became UAH. He had his people out there training the -- it was clear to him that if the space program was going anywhere, there needed to be one hell of an education. He never missed the opportunity to address teacher organizations. I did a lot of driving around with him to do these things. As a matter of fact, I wrote several speeches for him and he accepted them.

Therein lies a little story, too, that is of interest. He had this legislature, the Alabama Legislature, in his pocket because of the force of his personality and driving force that I mentioned before.

Q He addressed them at least twice and got millions in bond issues out of them.

A He got them to go along. I remember one time specifically on a trip to Montgomery we went down in the Redstone Arsenal's Beechcraft QueenAir. He piloted it. He was an excellent pilot. He could do any -- he could fly jets or whatever. We go down there and I gave him the cards. He wanted his speech on cards like that. He took the cards when we got in the plane and the plane got in the air. He would put the cards on the column and go through them while we were flying. He underlined the important points, and every time he underlined a point, the plane went this way. Then he would bring it back under control. We went to Montgomery and we got there and he did his customary job

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again, which reinforced, of course, the legislature's enthusiasm for this program, which -- they were making a pretty ~~fair~~ fair legislative body compared to some of them in the country. It was on one of those trips that he -- when we drove. He was a wild driver. He didn't know the meaning of a stop sign. But he said something outright to me something that I think was highly significant and showed how his thinking was going on. He envisaged a plan whereby there would be an island established in the Atlantic, and that island would be the generating plant through nuclear power for the extraction of hydrogen from sea water. He was great on the subject of the use of hydrogen naturally, because hydrogen is a wonderful source of energy, and it's also a dangerous source of energy. But it is unlimited. And he would extract that and he would ultimately pay for the process by the extraction in the process^{ing} of metals from the ocean. This included gold. As far as the distribution system was concerned, he said, "We already have a distribution system intact. It's going to need modification, but it's there. Natural gas. We would pipe," he said, "the gas from our generating plant in the Atlantic to some designated landfall where it would be then routed to all parts of the United States, and we would have the source of energy we want, which would pay for itself, which would be clean and not bother the environment a bit, and would be dedicated toward creating all the energy that this country needs." He said, "I have drawn up some figures to back my thinking on that." I didn't ask him for them. I wish I had. It would have been interesting. But, of course, that was fraught with all kinds of technical difficulties, because hydrogen going through a conduit pipe will ease out and perhaps _____ places if this pipe were made, for instance, of an iron alloy or steel. Hydrogen is notorious for what it does to steel. It hydrogenizes it, which makes nitrides and brittle steel.

"Visionary"

Q Explosives?

A Yes, like what we have now, which is also explosive. He thought of that. He said, "This could be done." He had the idea that there was nothing that human beings couldn't do if he were sufficiently motivated and driven to it. This was, of course, at the root of his work in Peenemunde, which he insisted to me and to others, that the sole purpose of his work there was furtherance of the goals that put man on the moon, even then at that time. He kept that up, and that's why he surrendered to the Americans. He said -- and I am quoting one of the Germans now -- he said, "Fellows, there is only one country in the world that can provide the resources and technical capability that we need to fulfill our ultimate project, and that's the United States. Let's go." And off they went. He was just that motivated.

Philos.

Peenemunde

Q Again, certainly a visionary.

A Absolutely.

Q And he analyzed the situation pretty clearly.

A You know, Bob, there wasn't a single flight of a space what you might call a "test vehicle" -- be it the Redstone or be it the subsequent stages of the Saturn -- not one of them, and they were all unmanned -- he wouldn't put anything in the air that had any chance, in his opinion, of resulting in a loss of life. He wasn't around when they had that disastrous fire in the Saturn when the three astronauts were --

Q Yes, on the pad. That was Johnson Space Center's doing.

A Before that, North American Rockwell -- he had all of these things loaded with sensors, so if anything happened, they could read every aspect of it and correct it. They devoted their time and attention to that. We had a contract with North American Rockwell to build the S2 stage, which was a new-type stage, because its engines were liquid hydrogen and oxygen. The Saturn first stage used the kerosene and liquid oxygen, but liquid hydrogen was, of course, quite a bit colder than liquid oxygen. So these five big engines of the first stage, which is the most powerful engine ever built by man that was controllable --

Q Is that the F1 in the S1 stage?

A The S2 stage was the first one that had the hydrogen/oxygen combination, and building that stage, of course, was quite intricate. We had all kinds of problems with the contractor, and it got to be -- Sam Yardin, I recall it well, was the program manager for the S2 stage, and he had all kinds of trouble with the people at North American. North American used essentially the Air Force technique; you give a guy a program, you specify what you want, you incorporate it in a contract, and you sit back and expect them to produce it. Von Braun didn't buy that, nor did Rees, who was his chief engineer, and with good reason. The president of North American Rockwell in the space division was a chap named Harrison Storms. And Harrison was a well-know, highly successful aeronautics engineer. Where else would you go to get that stage of technology then? He also had some personal characteristics which tended to keep outside influence outside of his plant. Well, von Braun got the backing of George Moore, the administrator, and stated that this system was compromising the program's schedule, that we wouldn't make it if something wasn't done. George Moore authorized von Braun to put together a team to go out to the West Coast. I was on that team, but Rees was head of it. No, Sam Yardin was the head of it, but Rees was represented on it. We went out to -- very unwelcomed both by the contractor and by the resident Johnson Space Flight Center group which was there and not up to the task of contending with Harrison B. Storms, known as "Stormy" and well named.

Q Their responsibility was which stage?

A Second stage. The first stage in which the liquid fuel, cryogenic fuels, were used. We went out there and started in looking things over and found some rather substantial difficulties for our people and their objections. They did everything possible. Of course, von Braun transmitted all this back to Washington, that his group was having trouble. I wish I could be sure of this, but George Little, I think, was the administrator. We had a meeting at North American, and it was to be a briefing by the North American people, including Storms. It was at that meeting, the conclusion of it, that von Braun just got up and addressed the crowd and said that the continued interference of the president of North American's space effort was impossible if this program was to continue. He right then and there called for the resignation of Storms. That was a monumental thing. ----- with good reason.

Q The site of this talk was where?

A At North American.

Q It was at their plant?

A At their plant.

Q And he got up -- and this was at the conclusion of this?

A All this was over. He said that any further participation by this president was intolerable. You know, George Moore -- the president of North American over all was there. Now, I am talking about the head of their space program. The whole works was there. There was a lot of gasping when that came up. (Tape turned to second side.)

-- that even Pan American, a big customer of their's, would not permit what they considered to be unwarranted interference in contract performance.

Q That didn't hold up.

A Not for very long, because he said, "No matter what Pan American bought, that's not where I am going. I am going to investigate and check out these plants. I want to be familiar with them." This was an outfit that made -- was heavy into the air-conditioning business, but they also made jet engines. They had a contract to build the air-conditioning system for the capsule. When you think about that, the capsule was -- you have seen it, I am sure, over at the Space Center.

Q Oh, yes.

A It had an air-conditioning system that would range from 1700 below zero farenheit, that is to say, and the heat factor was great. They had to control it and keep it within a few degrees through that temperature range. Of course, the temperature range involved the re-entry. It was quite a complex operation. Involved in that was -- they were having a problem with the radiator, which was associated with this project, which had a

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number of blind soldering points, and they were getting one good one out of 11. Rees thought this was unheard of. That's why he wanted to go. The upshot of it was that he insisted that they go and he was going to report this matter to the administrator, as he was inclined to do. They finally got this contractor to set up a briefing, and it was a typical standard program, you know: arrived at this -- and a greeting by the president, a briefing by some of their engineers, donuts and coffee, and that kind of thing. Then they would be furnished transportation back to wherever we were located, Downey. Rees looked at that and paid no attention to it whatsoever. We went out there early and he went through it and said, "Now we will visit the plant." This was just not done, but we went through the plant in great detail. During the briefing, Rees would break in with questions about what was being done. One specific question was of the nature that required the head of that particular activity to be on the spot to reveal it. Like, for example, that's Charlie So-and-so's job. He would say, "Where is this Charlie?" "Oh, he's not here. He's home." "We must speak to him. Call him and we will see him in 15 or 20 minutes." That's the degree to which they did it. We went through the plant in great detail. For instance, when we got home, instead of being home by noon, we didn't get home until 11 o'clock that night. He had these guys -- he had guys called in to describe what was going on. Then he said, "I will send you a man skilled in this type of performance." "Well, we don't think that will be necessary." "Well, I think it's necessary." Well, the upshot of all that was, was instead of 1 out of 11, they got 9 out of 11. They had -- what was his name. He had a notoriously poor personality. He had an angry personality.

Q And this was with Pan American?

A No, I can't remember the name of it. I do think it was Carrier, but it was a responsible outfit. Well, the word gets around real quick, and we never had any problems thereafter going anywhere. We were given a certain number of sub-contractors to visit, to look around the plant, to see what was going on, and to address the foreman of the various operations. (Unintelligible) was a very worth while undertaking, because these guys had no idea on earth that they were that closely tied to the space program.

Q The smallest of the contractor's item that they were making, could be of critical importance to the whole success.

A And they were very cooperative and we were well received. We spent several hours talking to these foremen. It was very worthwhile, and I think it was an extremely helpful program that was instituted (Unintelligible). Then we found out, too, that when we went into the capsule, that it was off limits to everybody but the workers and Rees. We just went down and they

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had very stringent regulations concerning the carrying in that area of loose items. You were supposed to wear suits with no pockets. The first one that he went into -- this was at 2 o'clock in the morning after we had gotten there. He called me up and said, "We are going to see the manufacturing area of North American." And that shocked them because no one had ever done that before. He went into the capsule under manufacture, and he caught things in there like pens and all kinds of trash. These guys had not been supervised, you know -- it was a serious situation. That resulted in a report which was called "The Phillips Report." I don't know whether you ever heard of that or not.

Q I certainly did, a scathing report.

A Very. It was pulled, and a number of copies and all that -- our copy was pulled because they were going to have this Thompson Report, which Thompson was a high ranking engineer and had lots of familiarity with the space program -- he was the one who headed the committee that investigated Thatch. They had things like different gauges of wire spliced, and that was strictly forbidden that there be any splicing whatsoever. Rees found out that on his own. He also found out that there were really no specifications as such for varying kinds of wire. He even went to the point of going up to a wire drawing plant in Vermont so he could be more familiar with it. That is the degree to which we went, and we were -- I was charged with reviewing the drawing room practices, in which once a drawing in approved and signed off on by the engineer responsible, it went into the library and was there closely controlled. You were supposed to have very close justification for using it. We found cases where erasures and pencil entries were made. All together, it was not a very --

Q Of course, if this hadn't been straightened out, there is very good reason to believe we never would have achieved that Apollo goal.

A I am convinced of it. They had -- the third stage was the stage -- Boeing was building that stage, but the S2 stage was the one I was familiar with, the first one, then following that was the capsule. It was really -- this was Johnson's responsibility to look into all these things, but they didn't do it. They couldn't have done it.

Q They just didn't have that Arsenal-based -- I mean the Arsenal methodology and prototype and hands-on manufacturing in your own shop so you can better monitor what your private contractors are doing.

A That's exactly right. These things were all straightened out. Of course, thereafter, there was no single failure in the Saturn Program after that. The astronauts all knew about this, too, and they were very -- they appreciated the interest that

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Rees and his assistants had.

Q Speaking of which, do you recall any specifics about any of the relationships that Dr. von Braun had with the astronauts?

A Well, he knew all of them and he made a point of meeting all of them. He always discussed the fact that we were dealing with human lives. You know, von Braun spoke perfect English. He actually had no accent. Rees was a little different and some of his expressions would (Unintelligible) air out of me. I heard this -- I didn't witness this -- von Braun was also a little bit on the eccentric side. At the meeting they had in the hotel -- that big hotel in Huntsville, the Russell Erskine -- it seems that some women's group was having a welcoming party and they had invited a speaker of some consequence -- I don't remember who it was -- to address the group. On the table where von Braun was going to be sitting they had a nice, big basket of fruit. The speaker was late, and by the time he got there, von Braun had practically stripped the fruit piece. He sat there and ate grapes and whatnot. I think he trusted Rees implicitly, and rightly so. Rees sometimes used to annoy me in some of his insinuations, and he -- like Rudolph, for instance, who is the subject of this inquiry by the Special Projects in Washington. He would have briefings, and I would attend some of those briefings -- as few as I could, as a matter of fact -- and he had a board set up in his briefing room. He had his -- if it wasn't his subproject (Unintelligible) briefing relating to their specific project as it was on the board. Every time anyone -- Rudolph had these, and he would insist at the beginning of every meeting that we are dealing with human "lives." These guys would dread these meetings, these briefings, because every time there was something that had turned up and every one of Rudolph's questions -- I would have to have him as a prosecutor -- would go into it in great detail. Then he would make a note in triplicate -- one copy was pinned to the board under that project, one was put in Arthur Rudolph's notebook, and the other one was given to the project manager. Before anything was done at the next meeting, those had to all be cleared.

Q These are action items?

A Action items. You could imagine -- these were mostly dealing with the engine. Rudolph was the guy who brought the first reaction engine -- V2. They had to clear those. Those meetings lasted until 2:30 or 3 o'clock in the morning. The briefing would not begin until after work is done on this date or "on this date, we will have our briefing." Those guys never knew what their wives looked like. He, himself, conducted them. That's the degree --

Q This is when he headed up the Saturn V overall development?

A I think he was primarily concerned with the engine. There

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is no question of time. There was nothing to it. He was there, and if you weren't there, they called you and called you in. But it was that degree of meticulous attention that was driven by von Braun and fully accepted by his team leaders. They tell the story -- I wasn't there when it happened -- one of the younger engineers raised his hand around 1 o'clock in the morning.

"Dr. Rudolph, I have to go to the bathroom." He said, "You should have thought of this; you knew the briefing was coming." As I say, all their engine tests were thoroughly instrumented; as a consequence, they were accurate. These were all reviewed, and if they were below the red line, there would be no more tests whatsoever until that particular item was cleared up. They knew when anything went wrong although it looked like it was a perfect (Unintelligible). So that was his policy. There was no question about it. He kept track of all this. He had a chauffeur driven (Unintelligible), and he worked in the car on the way. At the same time, he would suddenly take off for some place like Antarctica. He went down there. He used to say that the only thing connected with the space program he couldn't do was fly as an astronaut. They wouldn't let him.

Q He wanted to very badly, though, didn't he?

A Oh, yes. He wanted to do everything.

Q Was he provided a driver during most of the Apollo project when everything was on such a rigid schedule?

A Yes. When he was down at the Cape prior to -- he was always right there.

Q But in Huntsville, did he have a driver also?

A Yes, he had a driver from the motor pool who would drive him around. He was always on the go. It was a killing schedule that he kept. He managed to cram in some of these other things that he considered to be necessary for him to understand thoroughly what was going on. He was uncomfortable, I would say, in chewing out one of his crew, but Rees wasn't. Rees did the job. Some of these guys were recalcitrant.

Q Both the German-born members of the team --

A Oh, yes. I want to tell you a funny story. It isn't involved with Brown, but it's illustrative. He had on his crew the head of the propulsion laboratory at the test center, Carl Heinberg. Carl died not too long ago. He was a master sergeant, and Rees told me all this. Over at Peenemunde the transportation was dreadful. They had bicycles. And they complained to von Braun that they wanted to draw on from the bicycle to (Unintelligible). They didn't have enough bicycles to meet this gathering and there were government bureaucrats there observing all this. They said, "No, you won't have bicycles." Well, one time immediately after a plea or reconsideration on this ban, they went down to their bicycle rack in the morning and found

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that they were there. Wonderful. What had happened was, von Braun had told Heinberg that he had to do something to correct this situation. So Heinberg put his crew -- he was a typical supply sergeant -- out and they went and stole these bicycles. (Unintelligible) Peenumunde in there. But they had their bikes.

Q From some of the bureaucrats?

A Yes. They were furious about this.

Q From the Air Force side.

A They wouldn't stand for that, but they did. That was one that tickled the hell out of me. Of course, von Braun was actually on Himmler's black list. You knew that?

Q Yes, and was arrested.

A If it hadn't been for Dornberger --

Q I read about that. About the bicycles, Heinberg at Peenumunde was a master sergeant or do you mean he had been?

A He was a master sergeant.

Q In the active military?

A That's right.

Q At Peenumunde. Did he later become a civilian?

A He was one of those selected by von Braun to go on the trip to U.S. Forces.

Q I see. But was he the head of testing at Peenumunde as a master sergeant?

A Not Peenumunde, but here.

Q I know he later became the head of testing.

A He supervised the construction of those test stands. That was some job, too. You take the equivalent of about two and a half million horsepower, which the first stage generated --

Q Did von Braun ever tell you of any near misses he had in his flying as a pilot himself?

A No. I made a point of -- his aircraft crew over there were really top notch pilots themselves. One of the was a hurricane hunter, and they all insisted of von Braun that they would ride anywhere with him. He was a good pilot if he didn't have his notes with him.

Q That's a funny story.

A There is another story that amused the hell out of me. It doesn't involve von Braun directly. There was one -- and I can't remember his name exactly. He had a German name, Heir Dr. Professor, and that's as high as you can get. He was such a nuisance that none of the other people wanted him in their operation, but von Braun put the head on the right answer. He transferred him down to the office of Carl Heinberg, where he continued his autocratic way. I found out this one because I was Army liaison with this office in connection with the Redstone Scientific Information Center, which was one of the finest technical libraries in the country and certainly the finest in

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the southeast. I went over there one day just to see. Something was bothering me because we kept getting these requests for funds to buy expensive publications, very, very expensive. It was not at all unusual to pay \$150 to \$200 for a book. That was a big drain on the funds. So I rode to the library, which I should have done anyway, and found out that their big problem was people borrowing these books out and then forgetting to return them. High on their list was our friend. I came back. That evening or the next evening they had a little party or something, which I went to, and Carl was a big favorite of mine. He asked me, "How are things going?" I said, "Well, not so good." "Oh?" "Funny, it's in your laboratory, too, Carl." Well, that lit him up like a roman candle that there was something wrong with his laboratory. I explained to him that this guy had taken numerous books out of Redstone Scientific Information Center and never returned them. "I assume they are in his office and his office is in your laboratory." "Well," he says, "he's going to be gone on a travel. I give him as much travel as I can to get him out of the way. We will go look and see what's going on." So we went in this bird's office and we found shelf after shelf after shelf of books. I am not sure to this day that they were all our SIC books, but Carl was a man of action. So he got his crew, his favorite crew, together and they got a truck from the motor pool, and they went to this guy's office and they took all the books off the shelves and put them in the truck and took them over to the Center. The Center -- the poor guys over there were overwhelmed by this. They reported back to Carl that the books were gone. He said, "Let's go back to the office and see what's there." And he saw these empty shelves and says, "Without any books, why does he need shelves?" And they took them out.

Q How did this guy come to join the Lab anyway?

A He had all kinds of credentials educational-wise.

Q He was a German but not one of the original?

A He was one of the originals who had been there, and apparently von Braun thought he had something to offer. He gave him research assignments and he was pretty diligent in carrying them out, but he also managed to antagonize everyone. Carl called me up and says, "There are now no more overdue books in my laboratory. If you want some more, go to somebody else's laboratory and maybe the same thing is there, too." As a matter of fact there was, but nothing like this guy. He had so many.

Q He was a big abuser of that?

A Carl told me some of them looked like they had never been used. This guy was furious. He maintained he couldn't carry on his research assignments without having adequate -- and he didn't have time to go to the library. He also broke up a -- they had trouble on the stands. They had some of the union people that

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had been complaining about the working hours. So Carl visited -- when they came up, they were down on the work stand. He wanted to know how they got there, and he told them to get out and don't come back. He had a spanner wrench in his hand. They knew Carl well enough to know that if he had to resort to that, he wouldn't hesitate. He was a tough guy.

Q The master sergeant personality.

A He tickled me all the time.

Q Let's see, you were still with NASA and Marshall when Dr. von Braun left to go to headquarters?

A Yes. He had been advised by Mr. Webb. They tried to get him to Washington before that. Mr. Webb said it would be very unwise for him to go to Washington. He said, "They will eat you alive." Nevertheless, he got this position with Fairchild, and they paid him a good salary. He had a very nice, established home there that he lived in, and then he had these operations. The first one was for colonic cancer. They told him they had gotten it all and everything, but it returned.

Wash.
HQs

Q When did he have that surgery?

A That was after he left Marshall.

Q Right, and was up there. I have heard that he might have known that he had cancer when he left here, although he was very quiet about it.

A That may be right. Again, it was a case of -- I'll tell you another example. He had an operation (Unintelligible). I don't know if you are familiar with it or not -- my son had it. It's been radically changed. They rearrange the sinus. I don't know what you call it.

Q I don't know either, but that will be my corrective action of last resort. I may have to have that later.

A The way many doctors I have talked to about it say they would have it done when it is far more serious than it is now. He had that operation, and they told him he would be able to go back to work in a week. Two days later he showed up. I liked the guy very, very much. He was personable. As I mentioned before and we didn't follow up on it, he was a little bit loathe to lecture his people. He let Eberhart do that. Eberhart didn't mind doing it. If it needed to be done, he did it. Yet he was the most gentle sole imaginable outside. He was a Bavarian. We had countless hours together driving around, on a trip to Germany. He was taking a trip and going to his home town. I went down to see him. He lived very modestly, but he could be tough when he wanted to be.

Q He was Bavarian?

A He was a Bavarian. Of course, you know von Braun is a Baron?

Q Yes. I have asked Ruth von Saurma recently how that

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aristocratic entitlement went. Did the father pass the title on to the first born son?

A Yes.

Q She said, "No." She said that in some societies it worked that way, like in England, but all three sons were barons. She said her husband, because I asked Ruth about this, was a count and von Braun would joke to Count von Saurma that he outranked him, that the count outranked the baron.

A You know, I never heard him mention that. I heard all this from Rees. He never mentioned it to me once. I had a pretty good position over there. I was GS15. Von Braun found out that some of the guys, my contemporaries, received super grades over at the Army. This didn't bother me a bit. I felt I was in pretty good hands there. He insisted his personnel people to write a new job description which would put me well into the 16. Somewhere around here I have it and I read it and I couldn't believe what he said. Then the moratorium dropped in because it was getting a little out of hand. (Unintelligible) exceedingly over.

Q That reflected awfully well on you.

A He said that he was very loyal to those people. He remembered me. The minute I retired, before the retirement ceremony over here, (Unintelligible). The next day I went to work for (Unintelligible).

Q When did you retire from NASA?

A 1977. Eberhart died here recently at 88.

Q He had Alzheimer's, they tell me, and other ailments.

A His hearing was practically all gone from shock being close -- he married Maria. She took wonderful care of him. They had it all set up in Florida. She's still there.

Q Yes. More than a year ago -- I am working on a book also about the late Milton Cummings, a biography. I may have mentioned that. I contacted Eberhart's family, and by that time he was in a nursing home. They just said he had so few lucid moments and it was -- I even sent a prepared list of written questions, because I knew that he knew Mr. Cummings, but he was not able to communicate at that time.

A She had to do all his -- write out the questions, if there be one, and she would catch him in a lucid moment and he would answer. He was definitely under good care.

Q I also wrote Mrs. von Braun in Alexandria within the last year and Ruth von Saurma and Ernst Stuhlinger had put in a good word for me in there, because I know that Mrs. von Braun went to the Cummings' home for some of these dinner parties and some things like that. She was kind enough to write back a brief note to me saying, "I'm sorry. Other than my official contacts with Mr. Cummings, I really don't have anything to add or any comments

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about any relationship." She was very apologetic but also not very helpful. (Conversation -- Peter von Braun)

A Of course, I never heard much about Peter except from Eberhart and very casual comments from time to time. He was a wealth of information about Werner. He admired Werner very much, he really did.

Q Eberhart did?

A Yes.

Q Do you recall any eccentric or amusing personal characteristics of Dr. von Braun? I understand he rarely had any money on him.

A That's right. If it hadn't been for Bonnie Homes -- did you talk to her?

Q I have in the past, and I have a request in to her now to talk to her about this project. She's getting back to me on that.

A She's a wealth of --

Q She would be.

A She was a great gal and I was very fond of her.

Q She's been loathe to give many interviews over the years. She just thought that was all private and personal. She did about four or five years ago. One of our reporters did talk with her and do a personal interview. She shed some light on that. I am also talking to Dorette Schlidt, who was Dr. von Braun's secretary at Peenumunde, who still lives here with her husband, Rudolph Schlidt, who was one of the team members. I will be talking with her about some recollections back in those early days. Any other characteristics or eccentricities of Dr. von Braun that come to mind?

A No, not right off. Have you talked to Jim Shephard?

Q I have a call in to him, also. (Conversation)

A If it weren't for Bonnie Holmes, I don't know what (Unintelligible) would have done. He would put spur-of-the-moment tasks on her and she would manage to get through them. (Interruption in tape.)

(Conversation: Jim Daniels.)

Q I gather that while there were some positive aspects of Dr. von Braun's service in Washington, that some of that was frustrating to him.

A Very.

Q As you said, Webb had warned him that he might be eaten alive up there in the Washington bureaucracy mill. I had heard long ago that some of the Washington crowd sort of got the knives out for him --

A That's right.

Q -- once he got up there, long standing envy or jealousy or maybe that von Braun was the superstar.

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A Yes.

Q There were some --

A There was a good bit of that.

Q -- resentment.

A Right. He was afraid of the Office of Special Investigations. I was told that they would probably have gone into von Braun's background in Germany to an extent greater than was --

Q Really, if he had lived longer?

A If he had. They really did a number on Rudolph, of course.

Q Oh, yes. I have talked to Pat Richardson at length about that. Pat is just livid that Dr. Rudolph never contacted anybody back here for help or advice or anything. He got trapped.

A He got it through Haeussermann. (Unintelligible) pretty good account of that.

Q He sure did.

A You know this business of the Nazi thing was something. I never really brought it up, but as they said, I didn't run on endless rides (Unintelligible). Eberhart -- the subject of membership in the Nazi Party -- in effect he said anyone who declined membership in the Nazi Party was in for a rough go, in other words, you were a Nazi or you were no good.

Q If you wouldn't at least nominally join the party --

A He told me -- I said, "What about Werner? Where did he stand?" He said, "Werner paid no attention to it." If they said he was a Nazi over there, those people would have to get their job done. "Okay, if that's what you want?" They decided the -- Himmler never got over the (Unintelligible). He said that Werner had only one object in mind (Unintelligible). He had only one object in mind and that was to conquer space. Anything that didn't contribute to that, anything that we did that didn't contribute to that, he said was out.

Q Of course, the Nazi war machine didn't really appreciate that.

A Yes.

Q Did you have any contact or learn much about Dr. von Braun during the Fairchild Industry years when he was with private industry there for the first time in his life?

A No, I didn't. That's an interesting point, too, that most of those Germans had fabulous salaries if they were willing to step out of what they considered the contract they had with the US government. None of them ever did, one or two may have, but I never heard of it. Never occurred to Rees that he could do anything but what he did until he retired. Von Braun is of the same persuasion. Of course, when he retired, he went with Fairchild. I think he got something like \$250,000 a year or something like that.

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Q Which was great money back then.

A He was worth it, I am sure. It was his ideas --

Q I understand that he worked on such things as educational satellite system that involved the government of India, and that me be where Margaret -- was it Margaret who married an Indian man? Von Braun and the family on a few occasions went to India with that project.

A I am speaking out of turn, but he was a little upset about that. As I say, he was devoted to his -- the loyalty of his crew to him played a large role in the success of the space program. They absolutely devoted their time and attention to him. Of course, Ernst Stuhlinger -- I think Ernst and I have the same birthday. He calls me up every year to remind me that he is a year younger than I am or something like that.

Q Stuhlinger and von Braun had a pretty close relationship, didn't they?

A Very.

Q Great respect there. A number of people have told me that von Braun had this -- one trait of his was to be respectful to everyone as a person, that if it was the janitor or any individual, that he went out of his way not to embarrass somebody or to treat someone disrespectfully. He may have had to have some one on ones, some tough talk. But, as you say, he farmed out a lot of that to Eberhart. Did you notice that characteristic in him?

A He was always respectful to everyone. He never criticized anybody to me. He may have done so and I am sure he did to Eberhart and Eberhart would willingly step it. Eberhart got after von Braun a couple of times because some of these people that he disciplined one way or another went and complained to von Braun about it and von Braun wrote it off. They had some arguments about that. It was very rare, though.

Q Von Braun was supportive of Rees, wasn't he, when Rees had to criticize -- (end of tape)

(NOT on tape:)

“The man (v.B) was a humanitarian, he really was. He was always gracious, very gentlemanly.”

“The most courageous thing he ever did” was to fire Harrison Storms, President of North American Rockwell's Space Div. He stood up & did it by name, publicly, at Rockwell plant, when "Stormy" Storms was present. People in the crowd gasped. Von Braun did it w/o rancor, did it because it was needed.

EBERHARD REES: When asked by Ed if he'd given any thought to returning to Germany when he retired, Rees replied, "No, I'm an American." He'd stay in U.S. till his dying days-

"The Team"