

Jim Shepherd 10/5/98 (Part 1)

~~Handwritten notes~~

A When I thought about it, it struck me in my mind that it would be things which humanize him a little bit and the kind of conditions he lived under.

The 201 fire triggers to me things internal in NASA and Marshall that put a lot of plans on the back burner, including Webb's plan to use Marshall in the Marshall Maintenance system to introduce into universities. It was going to be a big deal. He lined up Syracuse. Syracuse came down to do an in-depth study of Marshall and how they managed things. We could have had \_\_\_\_\_ at the time.

Q Would you tell me that story again about Webb and VonBraun meeting where Eberhard Rees was there?

A That kind of goes to the 201 fire and the fire where Webb came down, and I don't really recall the exact purposes of him coming down. There was a big meeting as usual in the 10th floor conference room, and we were presenting the programs and ~~that~~ those kinds of things. At some point in time, Webb asked VonBraun to have a little private conversation, if he would step down in his office. You can imagine the MSC and North American were in quite a state of turmoil. It was a pretty sloppy job in tying into that.

Manuel  
Spacecraft  
Control

I don't think you should use this, but I recall an incident before this where VonBraun -- we were out at Downing with Lee Atwood, and we were walking down between the buildings out there and for some reason this came -- not out of the blue, because he didn't do things just out of the blue. He had thought through this thing going down. He said, "Lee, Stormy has got to go." Lee said, "We can't replace him." And it ended there. That was a good comment on VonBraun and a lousy comment on Lee Atwood. If Lee Atwood couldn't replace somebody, I don't know what that would mean. He should have been replaced; he was doing a miserable job. Finally, Webb came down to the office, so VonBraun and Webb, through discussion of what could be done -- I think sometimes people make trips for certain purposes, and I think this was Webb's purpose: He wanted Eberhard Rees to go out to Downey and spend time out there and take a team and pull this thing together, get quality and so forth. He was very impressed with their part and they had a good reputation. He told VonBraun, "If he does that and we get \_\_\_\_\_, I will get him in to see President Johnson." VonBraun wasn't opposed to that. He wouldn't oppose that. VonBraun thought Eberhard could do those sort of jobs, so he called Eberhard down. Eberhard came in and right between the eyes they kind of set him up with a good pep talk that they wanted him to go out there and straighten this mess out. Eberhard didn't object at that point in time, and he wasn't stunned or anything like that. You could tell he was kind

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of taken aback by it. Then when Webb <sup>at</sup> went back to the meeting and left VonBraun and Rees and myself in the office there. Eberhard looked kind of downcast and his hands -- he kind of walked around the room. He was so stunned that VonBraun would do something like that without consulting or giving him a clue. Anyway, after a short conversation with Eberhard -- he acquiesced and said he would go. In his typical fashion, he pulled together some of the best guys that we had and they spent months and months. They went through that thing like it was their own baby, this was their charge. There is one thing about them, I think in most instances -- and Bob you have sure noted this -- that many people who succeed do the same thing. Eberhard and a lot of his compatriots when they were given a task, they did it. Good soldiers. Some of my guys just wouldn't do that. In fact, we had a Center Director Lewis and there was this test facility, and he took them down there and showed them what we were doing and told them how we were doing it and put a team down there from here TDY at Downey. He said, "How did you do that?" Well, Bob, you don't say "How do you do that?" You don't give them too many options and that's how you get the job done. He apparently ran on the wild hair basis and he said he couldn't staff remotes sites. Well, that told me something about that operation. But this worked out well. We had a lot of people who went out and they made a lot of corrections.

Q What did Eberhard say when after Webb left? There was something to the effect -- Werner, you didn't tell me?

A "Werner, you didn't tell me anything. Why didn't you tell me?" He thought he had been done in, in a sense. That's not the best explanation of it, but if you look at VonBraun's stature and Rees' stature and maturity and their technical competence and all those things, it was kind of like a father and a child or a teacher and a pupil. You just learn how to chanel that, but that was kind of a gut reaction, you know, and it stuck with me.

Q And it was a mean, tough, dirty job but vital.

A It was a tough, dirty job. Then went into a mean, tough environment, too. Of course, North American -- I am pretty confident -- was pretty happy to have somebody come in whether it was good or bad to share the blame if something else didn't come out right. I don't think that, at a lot of levels, Houston wasn't too upset about it, either.

Q What was Stormy's full name? *(Harrison Storms)*

A The last name was Storm, and I can't recall his first name.

Q His title was?

A He was director of the space craft contract with Houston. I think all of us -- maybe in life, too -- have something that we are committed to like a contract, and if we are doing it with somebody we know pretty well, we don't check them out.

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When the solar panels collapsed on the Sky Lab, we had another APM with chock panels on it. We were over their contractor and TRW, and we were over them like fleas on a dog. There was nothing they could do that we weren't in there approving it. Then what McDonald Douglas did -- and that was a contract with McDonald Douglas for the solar panels -- was they designed the solar panels inhouse and we didn't have that penetration. Like a newspaper, I guess, you couldn't have one guy telling the Circulation Department their business. I think it's the same kind of thing with MSC and the investigation out there. There was a team that went out to get corrective actions.

Q I think you were telling me earlier about that meeting with VonBraun and Stormy sitting there. Were you telling me? And he announced that he was going to have go? Did you tell me that?

A I don't know. It may have been someone else.

Q I talked with Jim Daniels recently and some others.

A It could well have been but it has escaped my memory. But we sat in on a lot of tough meetings and not too small of meetings, too. Like in one meeting Herman Weiner said, "You people at North American like to lean out the windows, and you leaned out too far on the design of the S2 in the fabrication and production of that thing." He used the term -- I hadn't heard that term before -- "lean out the window," and of course, you can go too far and fall right out. He got rather irate.

Q Does that mean taking too great of a risk?

A Too great of a risk and maybe not pursuing the right course and those kinds of things. And these were tough meetings and they should have been tough. Too often in the programs -- and in the defense and NASA, too -- you get too cozy with the contractors, and in a sense you are not being illegal, but you give them more tolerance and more leniency, like your children.

Q I had forgotten that North American was the contractor for the S2 stage.

A Yes.

Q And VonBraun --

A We would go out there (Unintelligible). One satellite -- they had built a test stand out at \_\_\_\_\_ testing the S2. It was the middle of the night around midnight -- I am not sure which one called -- but they called him at home around midnight or something like that. Of course, it woke up VonBraun and it woke up Maria. She never could understand why they called him. Anybody would think that that was a dumb question for her to ask, but on the other hand, what do you do at midnight? I thought her reaction was not improper, but it stymied me a little bit. I would have taken a phone call at 2 or 3 in the morning if something like that happened. That was interesting.

Q Did she refuse to take the call?

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A No, they took the call. She wanted to know, "Why are they calling you at this time of the morning?" Because he was the program and they were reporting to him. It was better than somebody calling him in the morning and saying "I understand you blew up a test stand." He couldn't be in the dark like that.

Q You were at Marshall from when to when?

A I came to Huntsville in '50 working with the Army in instrumentation.

Q That was pre-ABMA?

A Right. John McDaniel and myself were both GS7. I learned a lot from John, and we worked pretty close together for a while.

Q You were working in what area?

A Instrumentation, like test stands. One great thing that happened was that we expanded the area and redesigned the test areas. So there was nobody around but John McDaniel and myself, and I hadn't been around that long and he hadn't seem much either. We designed these things and set the criteria down and wound up with a building that -- one of the guys that ran the test and evaluation part at that time didn't think that a room built for computers should have windows. So we had no windows in this building. We also were located too close to the test area, the old test area down there. We learned a great lesson in this thing, that our designs of test stands -- what we did was put massive concrete block and set truss and so forth with big block behind it and all reinforced rebar in the bottom and on the walls and then we put a roof on it with the same thing, rebars, up there and put concrete on top of that. Nothing could happen here. Everything was going well and we tested some rockets with Thiokol. They put together accolate propellant. We had tested several of them and had been evacuating our buildings because they were so close to the test stands. This time the question came up between myself and Red Barry, who was chief of the range there, on whether it should be evacuated. I said, "Well, let's do it this time and if all goes well, we won't do it next time." When I threw that switch -- we got all the guys out of the building and the cars out of the parking lot -- and that thing went first first high order. It was equivalent to 700 pounds of TNT going up. It took that roof off that thing and threw a bunch of concrete that weighed a ton. We got to another range down there which was a half a mile or a mile away and all this stuff started raining down. We had about 40 cars, private cars, whose motors were sitting on the ground. We had a 2 1/2 ton truck back there, and when a big piece hit that bed in that thing, it drove the rear wheels down in the black top down to the axles. It almost totally destroyed our building. Some of the guys -- one of the guy's desk had concrete right through it. Wires were hanging everywhere and lights were out and dust was everywhere.

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His desk instead of being level was like that had a big concrete in the middle of it. He would have been killed sitting there. And many other people would have been, too. So we learned a lesson about that. They classified all the pictures, but I would have liked to have had a picture of that, but they classified all the pictures.

I was also impressed that all the generals came down and lined up very shortly after that. They rode around and turned around and never asked one question. I think it was so overpowering. This was some time ago and it is still fresh in my mind.

Q You moved the monitoring building or block house?

A I am not sure what precautions they are taking now, except maybe not testing that sort of thing without evacuating, but the instrumentation area was never put back in there. That operation was moved out. Just based on the fact that if it is an integral function of what is going on, you can get away with deviations. If you went down as a non-combatant, you couldn't get in. They moved the disassembled functions, and if you are not entirely integrated, you would not be there. They moved over to Marshall about a year or two -- I don't recall the dates on that, Bob.

Q Marshall was formed in '60. Then you were with ABMA.

A I went from there to NASA and then went into the -- Do you know Dave Newby?

Q Oh, yes.

A I went with Dave.

Q I have talked to Dave.

A I appreciate Dave. I went right in with him. Then the facility expanded, so I ran the Facilities Office for a number of years, a couple of years. Then the Apollo program really got off the ground. Then there were facilities all across the country, all over the place. I did that for a number of years. Then we had the Marshall Center facilities and the external Marshall, the Sacramento and (Unintelligible) and all those things.

Q Mississippi, too, subservient to Marshall.

A Right. And all of that was being done. At that same time, the industrial operations became bigger, so we set up two offices and one facility on the Center and one facility for industrial operations at \_\_\_\_\_. (Interference on tape) What we had in the Marshall organization was a lot of Army Corps Engineer people. They don't move too fast and we had a problem there. I think we conquered those problems and got them moving fast, and they did a fair job. We couldn't wait. A colonel came in that program and he did a good job. I think most of the Corps of Engineers are now doing that work. You have heard this same thing in Mississippi. There was a \_\_\_\_\_ item down there on the Appollo. The test stands were behind schedule. We went down

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there once and found out they were driving piling in the ground, and to drive piling you have to test it. You put a load on it and let it set for a certain amount of time to see how much it can take. (Unintelligible) I said, "You can only test one piling at a time.)

It might have been the same trip, I don't know. We came back and this general, who had ended up in ICBM construction in the Midwest, came for a visit. He had his guys with him. He saw VonBraun. He did see VonBraun in the lobby of Building 200. They introduced themselves. He wanted to meet with VonBraun. VonBraun asked me, "What am I going to talk to him about?" I said, "Werner, the only thing I know to tell him is that his test stand in Mississippi is pacing the Apollo Program, and it's costing a million dollars a day to outfit that thing." The first thing VonBraun said, "How are you doing? I am going to tell you (Unintelligible)." This is an expensive program now. He came out and went back to Atlanta. He was in charge of the whole district down there. He was used to ICBM. He had a bigger report coming in. These people just put massive paperwork over this. This guy came out just shaking. (Unintelligible) I thought that was good that he just brought that right out.

Q This was the head of the Corps of Engineers district?

A Yes. Really, it's an area of all the districts in the southeast. He was pretty high placed. He reported to the Chief of Ordnance.

Q Civillain?

A No, military. He did a good job up there and in Mississippi, but set himself up, you know. He wasn't set up; he set himself up.

Jack Balch and Stennis and a lot of other people felt the salvation of Mississippi depended on this test facility, and the folks at Marshall are going to try to take work away from us. He was almost afraid of Marshall. He was trying to build an empire down there. I understand that. He had an in with Stennis and an then an in with Stennis' assistants and so forth and at the White House. (Unintelligible) Jack Balch told me about his interviews with (Unintelligible) "That thing that VonBraun went through is mild." But he still wanted him to do what he was doing in Mississippi because of Stennis. Stennis came down and passed through from Mississippi in a small aircraft and stopped by here one day to see VonBraun. We went in the office and talked and VonBraun explained the program to him and where we were. Then he wanted to show him the area. We got in the car and went down to the test stand, the SC1C test stand, and went on top of that thing. From that top, Bob, you may recall that you can see the river and everything. Stennis wasn't particularly interested in any of it, so he didn't show any great interest. Then we got to

"Politics" / "MSFC"

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the top of this test stand and he said, "Dr. VonBraun, I really don't care what you do here in Huntsville, just don't take it out of Mississippi." Those were the words. We saw lots of things like that. I thought, "Man, in Mississippi politics, they don't mince words."

Q Was Stennis still on the top of the stand when he said that?

A Oh, yes. I can almost see him today walking around. And this really made VonBraun feel good -- it made me feel better with his reaction -- the night before that, I was coming home in a little Volkswagen and I got hit in the rear end. Nobody was injured but my car was totaled, and I had a real black eye, and my nose was pretty banged up, and I didn't feel too good. Well, I knew he was coming and I didn't want to miss that. VonBraun made a particular point of saying, "Jim was in a wreck, but he came out to show the dedication we have at Marshall." I wouldn't have missed that for anything.

Q Were you Dr. VonBraun's assistant then?

A Yes. When they split the two facilities, I was made Associate Director of the facilities, both of those, and then when Frank left for better pastures -- this will be off the record because I don't want to embarrass anyone -- we were down in (Unintelligible) on a retreat, and we took the NASA plane down. The quarters weren't bad but they were typical. It was a work setting. It wasn't a contractors' retreat; it was a workers' retreat. The bar was open before the night meeting and some guys had a couple of drinks. The session started and VonBraun was up there sitting. It was pretty crowded, and I was pretty close to Max Norbitt and several others. We were arm's length from Frank Williams. Well, Frank had a drink or two, I am sure. He was talking about the future and talking about what they were going to do and how to do it and what programs and missions that Marshall should be involved in. Frank used that occasion to take on VonBraun publicly by standing up and challenging our concept of launch vehicles. Frank Williams was still in tightly with VonBraun, and he was just digging himself a hole. It was definitely VonBraun. VonBraun was a very loyal man to people who worked for him, that was one of his attributes. He looked out for you the best he could, but he expected something back, loyalty back, and not to be challenged.

Q This was in a big meeting?

A All the lab directors, all Marshall.

Q What did Frank challenge him about?

A About our approach -- I am not sure of the program now -- of the use of launch vehicles, were we using the right launch vehicles. Were we selling the right launch vehicles?

Q For Apollo?

A Well, just for the future. For example, the earth orbit

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concept or the lunar orbit concept. VonBraun was sold on earth orbit and Houston on lunar orbit, and they battled back and forth. The decision was made for moon orbit. As soon as it was made, not another word, that was it. We would do it lunar orbit. Set it up, cross our fingers, and go ahead. VonBraun did that and the whole team followed behind him. You just don't challenge that kind of -- When the decision is made, you go with it. Otherwise, you are going to sit around and argue all the time. We had had enough of that.

Q Frank, then, was later challenging some of those --

A He was challenging the future, what vehicle were we designing, and -- I don't know all the details of that. It was all about the shock that was felt by Frank taking him on like that publicly. If he didn't like something of that nature, go see the man.

Q I will talk with Frank later. We have scheduled a later talk, but I won't --

A He might not remember, and if he does, he will remember it rather painfully, I think. I am just telling you that.

Q I appreciate it.

A We didn't use those retreats and hideouts as effectively as we should have. Another thing that we did, and you have seen this or heard about it, we diversified. VonBraun, the idea was in the facility, we would study the actual results on weightlessness in space, and this was the result of his idea.

Q It was VonBraun's idea?

A Yes, along with how you put this thing together. To me it was construction, money, and what Congress gives and also the R&D money and all those that rules how you use either one. It is different philosophies, too. We put up a temporary building, and we would do that with the little money we had for that kind of thing. You have seen the building. It's a pretty good-sized building. The tank is an R&D thing, and we will do it with its own people. The welders and people over there in the test labs who had to live with this thing -- we had to call on David Foxworth to finish it up. The pay scale between David Foxworth's guys were like this, you know. These guys were expert welders, but they weren't ~~weren't~~ welding the tanks. Then it was built and everything, and everything was going good. We had a million-gallon tank or two or three million -- whatever it was. One of these subcommittees on space came down. They had heard about it and wanted to see it. They came down for that reason. They wanted to see this thing. We went down -- and you know how those doors opened up? The doors opened up and the guys saw this massive tank that was built as "equipment." That whole thing was a piece of equipment sitting there.

Q Not as a facility?

Neutral buoyancy tank

Resourceful Manager

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gutsy, resourceful manager!

A It was not a facility; it was a piece of equipment and also moveable. They didn't say anything. They came back to the building and they put a lot of restrictions on it. It was a different philosophy. It didn't come back at this point in time, but it reinforced what he was saying. He said you build the facilities and take the slap on the wrist, but the facility is there and you have got it.

Q Did Werner ask forgiveness rather than permission?

A Yes. Once you have got it, they are not going to burn it. They may slap you on the wrist, but that is all. That was his philosophy about this thing. It worked. Now, Houston didn't support neutral buoyancy work, that was not in their picture; they didn't care for it; they didn't want it; they didn't want to use it; they didn't like it.

Q Yet, they had the flight crew responsibility; right?

A This thing was used, and the concept, the fundamental concept, was really great. VonBraun -- it wasn't used exactly that way. He perceived engineers going in and trying out --

Q Equipment development and not training?

A -- not training but the hardware development. It turned out more of a training thing. That was okay. It turned out that way, but it was good for the other. There were lots of things they found that didn't work. It was a good thing -- I hate to see it not being used today, because it was a good thing and a cheap thing. The cost was very miniscule compared to the one out in Houston now. Of course, things have inflated, but it was still a low-cost operation and it served real well. Beside, it was something good on a tour stop. Everyone liked it. VonBraun would scuba dive, too; he liked that. He would dive in the tank. He talked me into going down and taking -- Dave and myself tried to get our card. Dave's ears hurt and he quit. I can understand that. We went on through that training. We had a good training program. We had some really good guys that ran that tank. They were really professional guys. We had some men from the Navy -- SEALS -- that came and helped out there too. It was just a well done tabulation.

Do you remember Hurricane Betsy? That was sometime ago. It came through New Orleans shortly after we picked up ~~Micheaux~~ Michoud assembly facility from the GSA. That plant had been there since WWII, and it had been used briefly during the Korean conflict to refurbish some tanks and things like that, but it had never really been -- there were concrete ships there during WWII. I don't think it ever really got into any kind of production. We got the facility, and the GSA had had two men fixing that building. It wasn't in too good a shape inside, but they wanted this big building because it was on the waterway. We could build them there and ship them out on the waterway and down the

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Mississippi, the Intercoastal Waterway up to the Cape and all those good things. It was a good investment and it worked out well, but they went down -- Kink and Marsh went down -- to look at this big jewel we had just picked up. They got down shortly after Betsy. I don't know the time, but it they wished it had been longer. It was a flat roof. They had 23 acres under one roof and it was flat. The roof hadn't been really looked at and not repaired for all these years. We went inside the plant. It's a beautiful plant, all air-conditioned and things like that. (Unintelligible) I didn't see it fortunately. I don't think I would have survived.

Q This was after a hurricane?

A Yes, it was after a hurricane, but I don't think I would have survived. It was coming out all over the place.

(Unintelligible) I will get to the relationships in a minute.

Q They were who again?

A They were Washington folks.

Q Washington/NASA folks?

A Washington, NASA, all of them. All the subcontractors were giving VonBraun and people a hard time about that. Ultimately, it was a big mistake. It came back to us. We had a regular scheduled meeting in Building 2488. You may have seen the conference room over there. It's a big mahogany-looking table out there. They could seat 100 people out there. There were a lot of people and they all sat around. I was sitting across the table. It was about this wide. We are talking about it and he is talking about his trip down there, talking about the leaky roof, the leaky roof at Micheaux. They were a little upset about this. Dave was sitting behind him, and every time Bob

\_\_\_\_\_ would say something -- I couldn't get Dave to shut up. Dave sometimes talked when he should have been listening. he At that time he should have been listening, because was saying that VonBraun couldn't do these things, that you can't move money from one to the other out there. That wasn't the time, place, or position to talk about it when you can't do something. So VonBraun looked straight at me and he had had enough. He tried to join the conversation. He hit the table like that and said, "You get that roof fixed at Micheaux, or I don't need you any more."

Do you remember George Constan? He said, "George, what's going on?" Needless to say, we made some tracks. We had a guy in Chattanooga to put this roof -- he redid the roof, and he used helicopters to lay the tar down. He got that roof repaired in short order, though. Everybody understood what was going on. It took a while to see the humor in that. That was really a comical thing.

We had another case. I remember more vividly Hurricane

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Camille. And the Mississippi Test Facility at that time had a good-sized coolator (Unintelligible). Jack Walters ran it. After Camille hit -- and I mean they had winds were like 200 mph and 20-foot tidal waves. It was a really devastating hurricane, five plus or however they go now. Jack had lost a lot of people. Some of his top men had lost people. Jack's house was destroyed. It was really devastating. Jack reacted like most of us would; he was really upset, and he was angry, and he was afraid. He was nervous. I can't describe the emotions completely, and it almost did Jack in. He wanted help. So called Dave and said, "Dave, we have to do something here." Dave's reaction was typical: "We'll get us a team down there and see what they need." VonBraun said, "Dave, they don't need a survey; they know what they need. We are going to get a convoy in the morning, and we are going down there." They had construction gear, radio gear, medicine down there. We were down there before the National Guard was down there with that stuff and stayed. I thought that was a lesson in action to meet a situation. It said: Let's don't study about these things, and when you know something is bad, get it fixed. And it was.

Q It does show his management style and personality.

A You have heard this thing in a way that people in that position don't normally hear. It reflects the time of this thing. We had Daryl Conner and Harry Gorman on the two sides of the house, one in industrial operation and one administrative. They had all the procurement under him. Conner had all the program management under him. Well Ed and his people wanted to have a procurement party, and it sounded good to me at the time. Harry Gorman was violently opposed to this thing. We used to have conferences every day out there. There came a staff luncheon, and they started getting into words. So they started discussing the merits of procurement hops from one place to the other for the big procurement contracts. Ed made his pitch and Harry made his, and they really got to going after each other. Because one was gaining a lot and the other was losing a lot. They got kind of involved in this thing. VonBraun was sitting there, and he was enjoying this thing immensely. When they got through with the discussion, it hadn't been decided. It was decided later that the big contracts, the major contracts, would be -- the chemist people would go too. And there was a lot of friction. VonBraun turned to me and said, "This is the best meeting ever since I have been here." (Unintelligible)  
(Discussion about the impeachment hearings going on at time of interview)

Q How was that resolved?

A As to the resolution, I think it was then mediated between Harry and Elliot later. Harry sensed from the fact that VonBraun

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came down that the program had to have these things, and it would make sense to do that. We were getting real fearful that the program manager would get to dictate to the contract manager about these things and that would be bad. The guys that were over there were strong enough to resist that, but yet they were flexible enough to make the decision and make a go rather than run to another organization and report to somebody else. This was a good thing, you know. Really, you need that kind of conflict resolution to resolve an issue. That can bring out the best and the worst of both positions, you know. It was a great meeting and showed a side of VonBraun: Give me the facts, all the facts, but don't bore me with the unuseful details. Tell me both sides unaltered and let me hear them, so I can make a decision on this thing.

Q Did he ultimately make the decision?

A Yes, he did. But at that point in time, there was an agreement that that would happen, but the ground rules were set better and there wasn't this animosity. I thought that was a good clue to VonBraun and his desire to get all sides of the story, how bad they were.

On another subject, when Webb came down to visit us we had a set kind of presentation to put on for these types of things: an introduction to Marshall. We had a great grants department. We had some brilliant guys down there in the grants area, and there was no concept that they couldn't put on paper and make look good. Someone sent out this chart to be read that showed Marshall's relationships to all the other people in the space program. Well, I guess there was some debate about where are we going to place Marshall in this relationship? Well, you can't go over here because that doesn't look good, and then you have Houston over here and Kennedy over here and Washington over here and you have (Unintelligible) over here and we are right here in the middle. Werner said, "What do you mean? Marshall is in the center of everything." He made a very valid point. Someone said it was a very egotistical chart, but that was VonBraun's character. Maybe in review, it wouldn't show that, but everything we said on the chart was okay.

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