Tessmann, Bernhard and Karl Heimburg. January 23, 1990. Interviewer: Michael Neufeld. Auspices: DSH. Length: 2.25 hrs.; ~~48~~ 49 pp. Use restriction: Open.

Tessman describes his early life in the Peenemünde area, Berlin and his father's occupation. Discusses his education and early work experience; first meeting with von Braun (1935). Little knowledge of spaceflight; saw sets for "Frau im Mond" at UFA where father worked. Tessman's arrival at Kammersdorf; discusses Reidel I, von Braun and Rudolph. Changes from engine testing to facilities. Involved in planning for Peenemünde began in 1936; construction and first testing of Test Stand I. Involved with wind tunnel. Tessman discusses A-4: design of ground equipment, early launches and accidents. First 25 ton engine tests and thrust measurement systems. Discusses Zanssen, Stegmaier and the Zanssen affair. Involved in planning of underground facilities in Austria. "Papa" Riedel in Austria; at end of war and after; his replacement by Reidel III. Discusses relations between Luftwaffe/Peenemünde-West and Army side. Herman Oberth at Peenemünde. Tessman involvement with Wasserfall; launch accidents. Safety problems of hyperbolic fuels vs. liquid oxygen. Von Braun and Heinkel rocket fighter development (mid 1930's). Starthilfe (JATO) and Heinkel rocket fighter project. Tessman evacuated to Thuringia at end of war.

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Interviewee: Mr. Bernard Tessmann and Mr. Karl Heimburg

Interviewer: Dr. Michael Neufeld

Location: Huntsville, Alabama

Date: January 23, 1990

TAPE 1, SIDE 1

DR. NEUFELD: Some further comments on the tape may be made by Mr. Karl Heimburg, who is also with us. Okay, so Mr. Tessmann, will you tell me your name, full name and birth date, and where you were born?

MR. TESSMANN: My name is Bernard Robert Tessmann. I was born in Zingst at the Baltic Sea, very very near Peenemünde where I in later years used to work.

NEUFELD: Where is that? Is that near Wolgast?

TESSMANN: No. That's across the lake from Peenemünde. It's Ruegen, the peninsula Ruegen. Whereas Peenemünde is on the peninsula Usedom.

NEUFELD: The island.

TESSMANN: We call it peninsula, but actually if you look at the atlas, you will see that this peninsula was surrounded by water, water, water and nothing but water. On the east side there was the Baltic. On the western side there was the Griefswalder Badden, we call it, and then on the far side the Peene. The Peene was actually a very wide river like the Mississippi River or Tennessee River, very wide river. It was a connection between larger waters.

NEUFELD: Yes, it was the outlet for the Oder.

TESSMANN: Actually it started in the so-called Large Haff, as we call it, as the Small Haff, and the Small and Large Haffs, they were fed by the Swine, the Large Swine and the Little Swine, and those came from the Pomeranian, how do you call it, sound, Bucht. Pomeranian Bucht. And the Peene went through Swinemuende, the largest city closest to Peenemünde.

NEUFELD: Yes, on Usedom. But your birthplace, what was the name of your birthplace?

TESSMANN: Zingst.

NEUFELD: So that's on Ruegen.

TESSMANN: Yes. I had in mind to bring my atlas to show you these places.

NEUFELD: I know the area around Peenemünde, but it's interesting you come from so close by. What did your father do?

TESSMANN: My father at this time was the owner of a small pension, you could call it, because we had lots of vacationers in this area.

NEUFELD: It's like a resort hotel.

TESSMANN: And a restaurant too, very small.

NEUFELD: Pension.

TESSMANN: Right. But he was a man who was in construction. Later in Berlin, he and my older brother ran a little construction business. He built small one-family houses for the people like lawyers and doctors. My father couldn't do much with me because I was a mechanical engineer at this time. I could have probably worked on sewer and piping and heating and air conditioning, but Germany doesn't need air conditioning--it's always cold--and heating system, it was very simple at this time. You had an oven which was heated by wood or coal, you know, and outside nicely covered with ceramic tiles, and this had given you enough heat to have a convenient day.

NEUFELD: Yes, I remember. I've seen that in Berlin, a Kachelofen.
TESSMANN: Kachelofen, you are right. I was thinking about the name. Kachelofen.

NEUFELD: Did you grow up mostly on Ruegen, or --?

TESSMANN: No. I was told I was about two years old when we moved to Berlin. So my father was again very much in construction business.

NEUFELD: So you would consider yourself basically a Berliner?

TESSMANN: "Ich bin ein Berliner." And I'm very happy to see this damned wall coming down.

NEUFELD: That's really a beautiful thing, isn't it. It just happened when I was just here. I think I went from Mr. Heimburg's place over to the Muellers' and there it was on TV, people dancing on top of the wall in November. So you lived in Berlin, and you went to school at all levels in Berlin?

TESSMANN: To school, yes, and college.

NEUFELD: You went to Gymnasium or Oberrealschule?

TESSMANN: Something like, yes. What was the name? Realschule, yes, and got the Reife-zeugnis (School Leaving Certificate) from the Städt Gewerbesaal in Berlin in order to be admitted in college!

NEUFELD: And you went to which university or Technische Hochschule?

TESSMANN: This was an evening course like we have here in the UAH Huntsville. It was the evening course of the Beuth College. [Correct name: Städt-Abend-Maschinerz=Bau-Schule of BERLIN.] We called it the Beuth College.

NEUFELD: So you took an evening course.

TESSMANN: Yes.

NEUFELD: And you worked?

TESSMANN: Five years at Orenstein & Koppel A-G-BERLIN.

NEUFELD: You worked in the daytime?

TESSMANN: I used to work in the daytime with Orenstein und Koppel on very heavy machineries. I practiced on locomotives and diggers and especially on cranes and worked out even a patent. I was very proud about it.

NEUFELD: So let me get the chronology straight. You were born in what year?

TESSMANN: In 1912.

NEUFELD: 1912. So you would have started going to college and working about 1930, somewhere in there would have been about right? You were 18 in 1930.

TESSMANN: Well, I tell you, I finished, I got the engineering certificate paper in 1935. Mid-June or July 1935, and that's about the time when I met Dr. Wernher von Braun. I met him actually about the 7th of August 1935 in his Berlin army headquarters office.

NEUFELD: That was at army ordnance --

TESSMANN: This was WaPruef 11.

NEUFELD: At Waffenpruefwesen.

TESSMANN: Waffenpruefwesen 11, yes.

NEUFELD: How did you meet him?

TESSMANN: Well, actually through college--a school friend of mine.

NEUFELD: Do you remember the name of the friend?

TESSMANN: Yes. His first name is Otto and last name is Kraehe.

NEUFELD: Was he at Peenemünde?

TESSMANN: He was at Peenemünde, yes.

NEUFELD: And Kummersdorf at that time?

TESSMANN: He was also in Kummersdorf.

NEUFELD: Was he there already working then for von Braun?

TESSMANN: Yes, he was.

NEUFELD: Because I've heard the name. I don't know who he is. So you knew him from Berlin?

TESSMANN: I knew him from Berlin. We went to college together, and we also worked together at the company Orenstein und Koppel. You know, I think he had some problems with his boss like many young people have, and just by accident he met Wernher von Braun at the office where he worked because they made a design for one of Kummersdorf latest, very small test position in Kummersdorf, and --

NEUFELD: For a test stand?

TESSMANN: For a small test stand, yes. Actually nothing but a little A-frame structure.

NEUFELD: What was the name of the company again?

TESSMANN: Orenstein und Koppel. A.G.

NEUFELD: It seems that you remember the date when you met Wernher von Braun so clearly.

TESSMANN: Oh, yes.

NEUFELD: Was there something really striking about it that the

date, the exact day, sticks in your mind? Something about it that's so impressive?

TESSMANN: Very important because at this day I had to make up my mind about my future. I had a pretty good position as a young fellow even at Orenstein und Koppel, but you need to have known Dr. von Braun personally. He was so convincing, you know. He was not only a scientist and a top engineer, but he was a top salesman. So he was so convincing and interesting, and he explained the future to me. He said, "You wouldn't make much money if you come to our place, but I can promise you it's a very interesting new job for young engineers who just start off, you know." And he was out anyhow to look for a younger generation to come, and he never had a good budget. He never had lots of money, so he was looking for cheap help. And he was right. I never made much money. Of course, I made enough to be satisfied.

NEUFELD: He would have been about exactly the same age as you at that time?

TESSMANN: Yes, he was 23 years old when I met him. I was about the same age.

NEUFELD: Did that strike you as being extremely young for someone in his position?

TESSMANN: Yes. But the way he talked--it impressed me tremendously.

NEUFELD: Could he tell you what they were really doing there?

TESSMANN: No, he did not tell me in details whatsoever. Nothing at all.

NEUFELD: Did he tell you it was rockets?

TESSMANN: No, he did not.

NEUFELD: He didn't even tell you that it was rockets they were working on.

TESSMANN: No.

NEUFELD: So what could he tell you?

TESSMANN: Well, he said it's an entirely new field of research and development, and I might be interested.

NEUFELD: Secret.

TESSMANN: Well, he did not say secret at all, but you know, the

way he talked, I felt there was something he did not want to go into details at all. At this time when I met him, my friend knew a little bit more, but he was not telling me much either. But it had given me an idea, you know; it was in the area of something I'd never worked in before.

NEUFELD: So had you heard of the rocket fad in the late twenties with Max Valier and the moon movie, "Frau im Mond" and all? Had you had much of an impression from it?

TESSMANN: Yes, I heard about it, and I had seen the film too. "The Girl on the Moon." And later I had seen the models of how they had made the movie.

NEUFELD: Where did you see the models from the movie?

TESSMANN: In the UFA.

NEUFELD: In the film studio.

TESSMANN: The film studio, yes. Since my father worked for a short time at this place, you know, for all kinds of things he had to build up, e.g. landscaping of the moon in plastic and gibs-plaster, he took me over just to show me. He was so proud that he could show me how a film was done and put up.

NEUFELD: Was that before you went to Kummersdorf?

TESSMANN: This was before, yes.

NEUFELD: Did you make any connection between this early exposure to the movie and the rockets, space flight? Did you think about it much, or was it something that was important to you before, the rocket, space flight? Was it important to you before this time?

TESSMANN: Not at all.

NEUFELD: You hadn't really thought about it much.

TESSMANN: I tell you, I was a greenhorn. I didn't know anything about it. It confused me, as a matter of fact, when Dr. von Braun was talking in his office and he was explaining a few things, you know, going into the Weltraum, into space and so on. So I got a little inkling what was going on, but really not knowing anything about rocketry.

NEUFELD: Did he talk to you about space flight the first time you met?

TESSMANN: No, he did not.

NEUFELD: He couldn't do that. [Crosstalk]

TESSMANN: He did not.

NEUFELD: So this was later.

TESSMANN: He had also paperwork on his desk, and I saw only some calculations with very difficult equations--and there I had enough. So he was just preparing for presentation he had to give to his boss, at this time.

NEUFELD: To Dornberger?

TESSMANN: To Dornberger.

NEUFELD: So at that time he had an office in Berlin that he went to all the time, as well as --?

TESSMANN: --Well, only once a week. Once a week he had to report about progress we made in Kummersdorf. Then, of course, the boss [Dornberger] came to Kummersdorf also every two weeks or so.

NEUFELD: So he would spend one day a week in Berlin.

TESSMANN: Yes.

NEUFELD: And the other six days a week --

TESSMANN: --all the time in Kummersdorf. And he was a hard worker. He never knew when we had quitting time. There was actually no quitting time. I guess the same was with Arthur Rudolph. He also was a workaholic.

NEUFELD: He mentioned to me that they didn't like to get up early in the morning, that they would sort of straggle in late.

TESSMANN: No. Von Braun never--and he used to say to all of his leading personnel, you know, "There never was never any important decision made before 9 o'clock, so why should I show up so early?"

MR. HEIMBURG: I want to say only one thing. He had called us, Hueter and myself, one morning and complained bitterly that at 9 o'clock in the evening we were not there any more. I said, "But we start out at 7 and you start out at 10; therefore, you have to stay that long."

NEUFELD: That was at Peenemünde, was it?

HEIMBURG: That was at Peenemünde.

TESSMANN: It was at Peenemünde, yes.

NEUFELD: So you met him in August and you went to Kummersdorf when? A few months later?

TESSMANN: Then we made another appointment. I had to report to Kummersdorf. And that was a hard time for me to find this little spot. Well, anyhow I made it, and --

NEUFELD: Was that a month or two later?

TESSMANN: That was in, I can tell you, it was about the beginning of November 1935, the 3rd or the 4th of November, the same year, yes. By the 11th of November, I was already on the job.

NEUFELD: When you came, how many people were there all working just on the rockets?

TESSMANN: He had quite a number of people. There was my later superior and boss, the design boss, Walter Riedel I, and Arthur Rudolph. Arthur Rudolph was in charge of all the fabrication jobs and testing. Also he had often advised us mostly in our design office because most of the guys worked rather with him than with our own boss, and he had a tremendous knowledge because he worked on hardware before.

NEUFELD: There was very little experience, and he was somebody who had actually worked on rockets before.

TESSMANN: Yes.

NEUFELD: So you found Walter Riedel, called Papa Riedel--did you find him hard to work with? A little bit?

TESSMANN: Well, a little bit, yes. But he was from Berlin and I was from Berlin, and two guys from Berlin things just don't go together too well.

NEUFELD: But he was a good engineer?

TESSMANN: He was a good engineer, yes. He was. He also had quite some knowledge in this area. He had worked--before he met Dr. von Braun, he worked in, oh, was the company Heylandt?

NEUFELD: Yes.

TESSMANN: In Berlin-Britz.

NEUFELD: Which was the same as the company Rudolph had worked with.

TESSMANN: Yes, Arthur Rudolph, I think, was too. And they worked very closely together.

NEUFELD: So the Heylandt people were the top people under von Braun.

TESSMANN: Yes.

NEUFELD: So would you say there were 10 or 20 or 30 or more people at that time?

TESSMANN: I would say there was a fellow, Werner Hahn, who later was put back as a soldier to the front, and he was killed, a nice young fellow. There was Mr. Kraehe, myself, Mr. Wackernagel, Mr. Reisig, now Dr. Reisig, but quite a good number of personnel in the shop area.

NEUFELD: Reisig, okay, he came a little bit later, though.

TESSMANN: He came later, yes. And we had quite a number of people in our shop area: Arthur Urbanski, Erich Ball, Werner Rosinski, Heinz Gruenow, who was our master mechanic.

NEUFELD: Yes, he went all the way back to Raketenflugplatz days, didn't he, Gruenow, along with Klaus Riedel and von Braun?

TESSMANN: Yes, he did. Klaus Riedel, oh yes.

NEUFELD: Klaus Riedel came --

TESSMAN: --from Reinickendorf, Flugplatz Reinickendorf.

NEUFELD: Yes. Klaus Riedel came shortly thereafter, I guess.

TESSMANN: Never to Kummersdorf.

NEUFELD: Never to Kummersdorf?

TESSMANN: No. No. Klaus Riedel started in Peenemünde. Our working place was a very pleasant area, and I felt very very comfortable, surrounded by nice fellows and a very interesting job. Only the job I didn't like so much because they put me on a design for small reaction motors, you know. We called them "ofen" at this time. Very small ones, about 350 kilograms thrust, with liquid oxygen as the oxidizer and "potato schnapps," we used to call it, as fuel.

NEUFELD: Alcohol.

TESSMANN: And this design never changed, you know. There was one typical design and then after, according to this design, many

engines have been built, but in different materials: normal low carbon steel, stainless steel, all kinds of alloys, aluminum, which were most favorite for welding jobs and machining jobs. And this repeated again and again. And so I went to my boss and said, "Now I have it, I want to do something different!" So he mentioned it during the lunch time; he said he will mention it to von Braun. And then he came to me, von Braun, and said, "Would you be interested to look into facilities?" And since I came out of a construction family, you know, I always was very much interested in structural works, not concrete but steel structure and all these kind of hardware. So they had given me a task, to start to make a layout for our so-called at this time Test Stand Number 1, which was to take care of single engine testing for the V-2 as well as overall static testing for the complete V-2. And I made several layouts. Everyone liked it except Walter Riedel. Oh, he didn't like it at all. He always was complaining.

NEUFELD: You mean?

TESSMANN: Papa Riedel. And then von Braun came, and I explained it to him, and he was very very pleased, so that had given me some push, you know, to continue in this area. From then on, I was hooked to facilities. It's not only the design but the overall planning, and the pleasant thing was, since Arthur Rudolph later was in charge of the complete industrial complex, I helped him plan all the locations of the individual buildings, you know, and worked with his people, Mr. Nartan, Mr. McDaniels, Mr. Schumann, and all his people, and it was a pleasant working arrangement. Now, after I had made a couple of layouts for all kinds of test positions, Dr. von Braun sent me over to Peenemünde as the very first one to work with the Bauleiter and the chief architect Johannes Mueller.

NEUFELD: He was an architect from the Army Bauamt?

TESSMANN: No, he was from the air force, as a matter of fact.

NEUFELD: That's right, because they were the ones who had the first construction contract, right?

TESSMANN: Yes. And all the first money was put up by the air force. Even my salary was paid by the air force.

NEUFELD: Oh, really?

TESSMANN: Yes.

NEUFELD: You were given the assignment to work on this Pruefstand I.

TESSMANN: Yes. Later in Peenemünde I got some draftsmen from

Mr. Mueller, you know, some architect's draftsmen, and they took my layouts, and we went into details, and when we had finished, Mr. Mueller called Dr. Wernher von Braun in Kummersdorf for a meeting. And so Dr. von Braun came and brought my boss too, and then we had a chance to explain how it goes and how to build it and they were also pleased including my design chief, Papa Riedel, so I was really happy. And from this time on, it went all the way through: Pruefstand IV, Pruefstand number II, number III, and all the rest later to follow. I also had the chance, of course, to help, as I mentioned before, Mr. Rudolph's industrial complex in the overall layout, so when the work train came and ended up, there was a little gate house, you know. You had to show your pass, and then you walked and came towards the headquarters building, as we called it, the Haus 4, where we had all kinds of organizations and engineers and branches and sections. There was a design branch in, Papa Riedel, and the documentation center and the Norm office, of my friend--he was the boss of the Norm office, this fellow Kraehe, Otto Kraehe through whom I met Wernher von Braun. And in front of the building, Haus 4, there was a place for a very beautiful evergreen arrangement, you know, with shrubberies and flowers and benches. People sat outside and had their lunch often. But underneath there as a very very heavy-built shelter.

NEUFELD: Air raid shelter?

TESSMANN: Air raid shelter, very heavy ceiling.

NEUFELD: Did you plan the air raid shelter from the beginning?

TESSMANN: Right from the beginning. I didn't have to do anything with the shelter, no.

NEUFELD: But it was there.

TESSMANN: But it was there.

NEUFELD: It wasn't added on.

TESSMANN: No. Anyhow, before you hit the Haus 4, you know, to your left and to your right we had very pleasant individual buildings for VIPs to stay overnight and for our big boss, Dr. Dornberger, when he was at Peenemünde. And Dr. Wernher von Braun had his room, rooms, also in one of these buildings. And then passing, going through the area, we had right behind Haus 4, the heating plant, which the architect built the main stucture to look like a locomotive; in the back yard, of course, the storage of black coal and what have you. It was all brought in by railroad.

NEUFELD: So the railroad ran right behind the heating plant?

TESSMANN: And on the left side, we had our PW, Pruefstandswerkstatt, and behind IW, that means Instandsetzungswerkstatt, where Rudolph was in charge of, all the small parts hardware had been manufactured for the V-2 power plant, and then on the left side of the IW, we had the ZW, that means overall assembly hangar --

NEUFELD: --Zusammenbauwerkstatt.

TESSMANN: Zusammenbauwerkstatt, where we could take the complete V-2 and put it up to one unit and even have it put in the vertical position, and that's where our master Erich Ball was in charge, a friend who also is still in Huntsville, but he now is in a nursing home. He is very sick.

NEUFELD: Who is that?

TESSMANN: Erich Ball. Between these two buildings, IW and ZW, we had a big complex, a very large L-shaped building. It was BSM, for Ballistik, Steuerung und Messtechnik, where Dr. Steinhoff was the boss.

NEUFELD: Yes, Steinhoff starting in '39 or --

TESSMANN: Yes, very early. And later Dr. Reisig also came out of this area and later worked in the test area.

NEUFELD: You must have gotten the assignment to start on the Peenemünde Test Stand when, in '36 probably?

TESSMANN: Already in '36.

NEUFELD: And you went up to Peenemünde in?

TESSMANN: In '36 even.

NEUFELD: '35 or early '36

TESSMANN: Because I started my job in November, 1935, in Kummersdorf, and a half year later, about a half year later, I started in the field of planning and design.

NEUFELD: So about six months later, that would be into early '36.

TESSMANN: '36, yes.

NEUFELD: That you started the first half of 1936.

TESSMANN: Yes, because when I had finished the first layout, Dr. Wernher von Braun asked me if I would like to fly with him and just go over the area of Peenemünde. I chickened out because

I flew with him so often from Kummersdorf to Berlin. Of course he did me a favor, you know, to go fast to my parents' home because we used to take the railroad all the time from Kummersdorf to Berlin, and that took the whole afternoon. While flying he made now and then big loops, you know, and my stomach just didn't take it too well. Dr. von Braun was an excellent pilot!

NEUFELD: He enjoyed flying --

TESSMANN: And Papa Riedel didn't like it so much anyhow. So I guess he took him finally. But I couldn't, I wouldn't have learned anything, but got only the feeling why the bosses preferred this remote area; I knew it was the most beautiful area, wooded area, you know, with lots of pine trees and leaf trees like oak trees and Buchen, elm trees. I was told and I knew there was a wild life, another wild life, a bird sanctuary between Peenemünde and the Ruden. The Ruden, this is a very very tiny little island, without people living there.

NEUFELD: Yeah.

TESSMANN: Just woods and shrubs. But a beautiful little spot. I think the air force used them as a target area. I don't remember. But I know lots of airplanes circled around and dropped something. I cannot be sure anymore.

NEUFELD: By Ruden.

TESSMANN: Ruden, yes.

NEUFELD: The little island.

TESSMANN: We had beautiful birds in this area, all kind of ducks, and that's the reason, and I was told, I do not know any more, some one of Dr. von Braun's relatives, grandfather (?), used to go duck hunting when the season was open at this place, and this probably was the time when his mother told Wernher, "Why don't you take a look?" Because he was out for a very remote area. Kummersdorf you know was too inhabited. Close by were little villages and housing projects, so people could listen and watch what was going on. Or Dornberger didn't like it at all. So we were looking for a very remote area. And yet an area, as he expressed himself later when he returned from his first flight, that we could build up a launching site and make flight tests to check out the guidance and instrumentation, you know. So we could fly practically parallel to the --

NEUFELD: The coast?

TESSMANN: The coast line of the Baltic Sea.

NEUFELD: When do you remember Peenemünde being mentioned? Was that right after you started working there?

TESSMANN: No. Way later, as a matter of fact. I never asked, of course, because it was not my way to be nosy towards my superiors. So I thought, if they need me, they will tell me.

NEUFELD: So in '36 some time they just said, "We have this; we've decided on this site."

TESSMANN: Yes. Well, then he, when we looked over the final drawings set of our Test Stand Number 1, then of course, Dr. von Braun opened up and invited me to take a look. He would take the double decker plane, you know, from the army he always used to, and fly over and take a look. But then he mentioned a place near the Baltic Sea. He ever didn't say Peenemünde because Peenemünde didn't mean anything to anyone. Later, of course, when I saw maps, there is this huge large River Peene, and Muende means, you know, mouths; since the Peene went off in many little rivers, into the Greifswalder Boten you could say, here we have many little mouths, they call it Muende. That's the reason the name Peenemünde came up, the little village of Peenemünde. Actually there had been only seven or nine small houses, not more. But elderly people, fisher people, lived there, and they had a very happy life. They used to fish herring, you know, and they went to Stettin and to Swinemuende, to larger cities, and sold their fish; it was their business.

NEUFELD: The village was changed a lot, I assume, by the intrusion of all of these people.

TESSMANN: Yes. One of our liquid oxygen plants was even built into this little village, directly in the middle of this little village, in between small houses covered with straw, dry straw.

NEUFELD: To disguise it, to cover it up.

TESSMANN: Yes.

NEUFELD: And then, so you said, you went up early in '37 or something like that?

TESSMANN: No, I started about two weeks before Christmas in 1936 in Peenemünde. That's when I met Mr. Johannes Mueller and many many others, and now a good friend, another fellow who is an old timer at Peenemünde, he today is my friend you know but he lives in Bonn. He worked, as a matter of fact, as a chief electrical engineer. He had to get from Wolgast and from other larger cities currency into our new area.

NEUFELD: When you got there, was there much of anything there?

Of the facilities?

TESSMANN: There was this Bauteitung headquarters building of Mr. Mueller, also very beautifully designed, the roof covered with straw, very nicely done, very cozy.

NEUFELD: And maybe roads cut out or some other things but not much.

TESSMANN: Well, I had--see, it was a terrible noise at this time, lots of bulldozers and heavy machineries going on, and trees cutting down and saws running all day long, and heavy trucks going in and out. It was not a very pleasant picture. I only could say, "Oh, heck, what are we doing with Mother Nature?" I felt so sorry about it because I love woods, outside living.

NEUFELD: Yeah. It certainly changed the place forever.

TESSMANN: Well, then, I had seen big holes, you know, and then when we started out Test Stand Number 1, it was not the very first construction, I should say. First we built little test stands like the Test Stands Number 3 and 2 for single smaller engines, vertical test stands. They came first. And since Mueller did not have enough personnel on the construction site yet, I had to be in the office in the morning and late afternoon I went out, and just to help the foreman explain the drawings, you know, or answering questions in case something was not too clear because in several areas it was a little bit tricky, you know. We had to build in all kinds of systems openings through the concrete walls in order to provide later operational systems so you could operate from inside to the outside where actually the test object was located.

NEUFELD: Pruefstand I was not finished till what, 1938, '40?

TESSMANN: Pruefstand I was finished about in 1938. You see, the 7th of May, 1938, we had our very first test run. I was not present. I was in Berlin, just to see my bride and to marry. So I had a little bit funny feeling. I was not only in charge of the layout of the test position but also for special hardware test equipment, that the vehicle would hold down, you know, and put together to measure thrust. If you do something personally, you know, you get a little bit concerned

NEUFELD: Yes, you were sorry you weren't there.

TESSMANN: I was told by phone later, you know, that it was a beautiful test and everything worked out just fine. So that made me happy. This was one of my happiest days, of course, in professional life. But when the construction started, I learned something entirely new, I didn't know at all. It was a very

famous construction outfit, (Wiemer und Trachte) or Beton-and Monier Bau Company. They built, they constructed lots of our buildings, the ZW and the IW, our Pruefstandswerkstatt, and on the other side we had our materials laboratory. Of course, you could imagine that our stress analyst made lots of tests because of things you could not calculate too well. There are lots of equations to check on, on bending, on torsion and what have you and so on; as soon as during the test dynamic forces develop, that means vibration forces caused by fuel oscillation in your tank units or by the outgoing heavy gas speed, you know. All the hardwares are shaking. And now these hardwares some time might give under severe conditions like heated conditions or even under-cooled conditions like you have on your liquid oxygen side. So they made all kinds of simulation tests in our material laboratory. And next to the material laboratory, just to make the picture complete, was our wind tunnel area, where Dr. Hermann was, Rudolph Hermann.

NEUFELD: Yes. Yes.

TESSMANN: And many others who are still even around the United States. At Tullahoma I know one.

NEUFELD: Who is that, do you remember? Somebody from aerodynamics?

TESSMANN: Mr. Ramm. And in NASA headquarters, there is one. I forget his name. Well, anyhow, he was a deputy of Dr. Hermann.

NEUFELD: That would be interesting for me, just across the street, but it's a name you don't remember. It's okay. If it comes to either of you, let me know.

TESSMANN: You know him too?

HEIMBURG: As compared to when I came without any experience to Peenemünde and wanted to know something about aeroballistics and aerodynamics, you could not --

TESSMANN: He had a Dr. Gessner.

HEIMBURG: Right, right. You could not talk to Hermann, but you could talk to him. He was for me an excellent teacher too, to produce the wind tunnel and the aeroballistics.

TESSMANN: Since I had mechanical designers in my branch, I helped out for the wind tunnel design often. I had to do quite some work for Dr. Hermann, and I had to deal more with his deputy than with him.

TAPE 1, SIDE 2

NEUFELD: Now, as far as the wind tunnel was concerned, you were involved with constructing the wind tunnel?

TESSMANN: No, not constructing the wind tunnel, not at all. Occasionally when some hardwares like a superstructure was needed, you know, as a holder for models, adjustable distance models and so on. But normally I didn't have to do anything with it anyhow.

NEUFELD: But you were located in the headquarters office?

TESSMANN: I was near the area because the House 4 was so small. Finally they threw my branch out because I did not work too well with Papa Riedel anyhow. Dr. von Braun transferred my whole branch to the test organization, I don't know, test organization, and that was under Dr. Walter Thiel, and with this man I worked very nicely together later. I met Dr. Thiel already in Kummersdorf. Dr. Thiel a fine gentleman; I learned many things from him. He was super!

NEUFELD: He came about when? '37 or so?

TESSMANN: He also came in 1937 to Peenemünde because he continued his work in Kummersdorf for quite some time.

NEUFELD: Yes, I remember. I've seen documents as well, until '40.

TESSMANN: He continued the four ton engines, we called it.

NEUFELD: I was under the impression that the 25 ton test couldn't be done until 1940 or so, '39?

TESSMANN: No, '38. '38 we had the very first test on Test Stand Number 1.

NEUFELD: You're sure of that? It was a 25 ton engine that was tested in 1938?

TESSMANN: Yes, it was a V-2 engine, sure.

NEUFELD: The very first version of it. Because Thiel stayed down in Kummersdorf until 1940 or so, didn't he, most of the time, '39 or '40?

TESSMANN: Could be. Could be, '39. Certainly he still was there because in 1939 I was told--I didn't know; I was told later--Adolf Hitler had shown up in '39 in Kummersdorf, and they had given him a guided tour and had shown him a very simple test of the vertical small engine, test stand.

NEUFELD: Probably the four ton engine or something. Certainly they couldn't do the 25 ton engine.

TESSMANN: No, no, no.

NEUFELD: At Kummersdorf.

TESSMANN: There weren't any facilities. For this purpose you need lots of instrumentation, and we had just a little bit in one of our trailers, you know, very primitive.

NEUFELD: You're talking about--yes, I know what you mean. It's like a --

TESSMANN: --wide front--

NEUFELD: --a pen roll or something. I can't think of, I really can't think of the word myself; it won't come to me. But anyway you just had very primitive facilities.

TESSMANN: And we didn't have enough water in this area because you needed about the Tennessee River, you know, to cool down the deflector. Even with a small engine we had our problems.

NEUFELD: The problems pumping enough water.

TESSMANN: Pumping enough water.

NEUFELD: That was a consideration too.

TESSMANN: We were happy when we got our water through a 3/4 inch line just for drinking purpose. But not for any test purpose.

NEUFELD: Yes, go ahead, Mr. Heimburg.

HEIMBURG: When was Test Stand Number 8 built? Because Test Stand Number 8 was built for combustion chambers only. And my question to you is, wasn't the A-4 engine checked out on Test Stand Number 8 before it came into the missile?

TESSMANN: Not as a research engine, no, not as a research engine. Test Stand Number 8 took care of how do you call this? Fabrication. [Pre-production testing]

HEIMBURG: Okay, off the line.

NEUFELD: You can give the word in German if that comes to mind. But Test Stand Number 8 was finished when?

TESSMANN: Well, it just came pretty soon after we had finished our Test Stand Number 5, which was a pump test position. Number

5, Number 1, and in between was Test Stand Number 8, and we ran these V-2 engines in the vertical position.

HEIMBURG: So 8 was only for production.

TESSMANN: For production engines, that's right.

HEIMBURG: Which came out.

TESSMANN: Yes. But the very first research V-2 engine was on Test Stand Number 1. I remember too well, because I was asked by Mr. Schueler, Albert Schueler--he is a fellow worker of mine, a friend, you know--to help him to lay out or get him a man to help him to lay out a thrust measuring system and we really did it, but first we had to build a kind of a corset to put around the V-2 in order to hold the V-2 down on something, and then connect the corset with a number of lever arms, you know, and these lever arms, of course, were connected to a pole which went down to the--to a Waage, scale, to a scale, and this was the Toledo scale, I remember.

NEUFELD: So you had an American scale that you used?

TESSMANN: Toledo?

NEUFELD: Toledo, Ohio?

TESSMANN: It was an American company from Toledo, Ohio. The reprensentative lived in Stettin, Germany, at the time and talked a perfect German!

NEUFELD: It probably was a German branch of the American company because it was an American company.

TESSMANN: Could be, yes. There was this young man, we worked together and worked out lots of changes had to be made, and then later, of course, some very wise guy, some guy out of my office said, "Why do you go to all this trouble when you know that we have load cells on the market? These load cells are electrically operated and give a signal to a recorder." And these load cells, it was easy; you just put it in between the lever arm, which were connected to the corset, and the firm structure and where the whole V-2 was resting on, so you could also balance the weight of the V-2. Later Mr. Schuler changed to an German outfit, EXACT SCALE Company, and developed together with them the final Thrust Measuring Device. This Test Stand Number 1, I have also to tell you one sad story about it. One day we had a man to run a test. It was about 6 o'clock in the evening. But then the people from Abwehr --

NEUFELD: --counter-intelligence--

TESSMANN: --counter-intelligence came and said, "No, you do not run a test that late." It was a little bit dark already. Because there are airplanes up somewhere, you know, they will notice everything and shoot pictures. So we had to stop. And the test engineer in charge called Mr. Heinisch and Mr. Theodor Poppel--Poppel old friend of mine, he passed away, he was later in Florida, he was the assistant test engineer--they were too busy to empty out the V-2. So they left the liquid oxygen into the tank too because early in the next morning they wanted to continue, to run the test; but if you leave the whole unit under-cooled for such a long time, it shrinks the material. So between the vehicle and the corset we had some knuckles. They were pushed into some parts of the ring of the V-2 structure, and now the V-2 shrinks and these knuckles went out so the whole vehicle slipped through the corset. The corset was hanging in the structure, but the vehicle went down with its tail sitting on the water cooled deflector, and oh boy, it was a sorry picture nad very frustrating to all of us. I was sitting like in a court house. The commander, General Zanssen, he was ready to put me in front of a firing squad! Something like this. He was very very mad. And then Wernher von Braun tried to explain. (I didn't get much support from my boss because he didn't think much about me anyhow.) So Wernher von Braun came, and then we ran through all the drawings, and then later we had proven that the design was perfect, was all right! The mistake was that we left liquid oxygen for too long inside the vehicle.

NEUFELD: That it was just the stupid mistake of somebody not to drain the --

TESSMANN: Yes, not to empty out the vehicle.

NEUFELD: Do you remember when that was? Because it sounds like an incident--I've seen a memo, a very nasty memo from Dornberger. It's the end of January, 1942, about the very first A-4, saying that it slipped and fell.

TESSMANN: 1942? I am not able to remember.

NEUFELD: The beginning of '42. That's when the very first A-4 was --

TESSMANN: Oh, oh, that was a launch from Test Stand Number 7.

NEUFELD: No, I'm not talking about the first launch. I'm saying, there's a memo from January '42 saying that the very first vehicle that never got launched because it was destroyed in March of '42 fall. Was that about when this incident happened?

TESSMANN: Maybe?

NEUFELD: Or was it much later in the war?

TESSMANN: It must have been earlier. Wait a second. It must have been earlier. I was in charge of my branch, was also in charge of the design of the international corset, as we called it. The corset was used for maintenance, to bring the vehicle up in the vertical position, for transportation, for all kinds of handling, you know, and specifically, of course, for static test stands where you had something to hang onto, to put it on and --

NEUFELD: --but you wouldn't have had a complete vehicle until the end of '41, I would say, right? The first complete V-2 or A-4 would have, was finished round the end of '41, something like that.

HEIMBURG: Wasn't there an accident while transporting a total vehicle from the [unclear]?

TESSMANN: --yes--

HEIMBURG: --to the test stand, on the trailer, and the vehicle was destroyed.

TESSMANN: --yes, oh, Hans Hueter was in charge of, yes.

HEIMBURG: That's what you're referring to.

TESSMANN: You might be right. You know what happened? Out of the Zusammenbauwerkstatt, we were to take a complete V-2 to the launch site, I don't know, maybe to the launch site or maybe to Test Stand Number 1, I don't remember. Well, anyhow, it was put on the so-called Meillerwagen. This was the only transportation vehicle for the complete V-2, developed by the company Meiller in Munich, and so there was a street next to the railroad track, parallel practically, but between the street and the railroad track there was a draining ditch

NEUFELD: A ditch?

TESSMANN: A ditch. And I don't know how this had happened, but anyhow finally the truck left the road and came in the soft and so with the Meillerwagen and the whole vehicle toppled over and the V-2 was in the ditch.

NEUFELD: Was that later in the war some time, or middle of the war?

HEIMBURG: That was in 1942.

TESSMANN: I really don't know. I had nothing to do with it. I only had sympathy for the fellow who was in charge because there

wasn't anything wrong with the Meillerwagen. The Meillerwagen was later even used by the troops.

NEUFELD: But this incident of the slipping off of Test Stand 1 also happened too, all right, where it slipped because it was left tanked up all night.

TESSMANN: Yes. It slipped. It was a complete vehicle.

NEUFELD: And that was later on?

TESSMANN: Because the tail compartment was bended entirely, and one of our later friends too, he also was in Huntsville, Otto Eisenhardt, you know, he was a master in the sheet metal shop, and he managed to get it straight again.

NEUFELD: It certainly sounds like the first vehicle, to me, the very first one.

TESSMANN: It must have been one of the very first ones.

NEUFELD: It dropped.

TESSMANN: Yes.

NEUFELD: Because I also know that first vehicle was very unlucky because it also blew up on the test stand without ever being launched.

TESSMANN: No, I have to, I probably have to correct something because we had run also, as I said, in May 1938, we also had run single engine tests, and for this purpose we had LOX and fuel heavy test tanks, you know. They were pressurized. We did not run with the complete power plant, no pumps, but only pressurized with N_2, with nitrogen gas, and made single engine, typical R&D engine tests. And often for this purpose Dr. Thiel even had come to Peenemünde. Not that he was needed immediately, probably, I don't know. I cannot say. For his own personal interest and knowledge.

NEUFELD: Yes, he would still be supervising those tests, I guess.

TESSMANN: Yes.

NEUFELD: It would be under him. So that's what you think those very early tests of the 25 ton engine were.

TESSMANN: Must have been, yes.

NEUFELD: Just a very sort of rough R&D development.

TESSMANN: Well, anyhow, we had this Toledo thrust measurement devised and in operation already, and everyone, specifically, Albert Schueler, he was so happy that the scale had shown him that it worked, you know. Of course, through all these many adjustable things [lever arms] we had lots of friction losses. There was 10 percent or more even for reading it, but he didn't mind, and pretty soon we found out anyhow because the so-called load cells and the Toledo thrust measurement derived worked together one day, and so this was one unit checked the other unit, you know. And that's where he learned and we all learned.

NEUFELD: I was interested in your comment about General Zanssen, or he later was a general; at that time he would have been Colonel Zanssen.

TESSMANN: Yes, he was.

NEUFELD: So he didn't get along with you well? Or the other way around.

TESSMANN: Well, yes, of course, he also could be very friendly, but for him it was the worst thing which could happen as a boss, you know. He was in charge of the overall, when General Dornberger was in Berlin. So it must have been very frustrating to him. I could feel it today; I would know how it is at the time the complete A-4 shipped out of the holding device.

NEUFELD: Talking to a number of people, I get the impression some really got along with him, really liked him, and other people didn't get along with him.

TESSMANN: When he was invited by Wernher von Braun to a party, you know, at Wernher von Braun's private home, he was the most friendly fellow, you know, and he came and took me in his arms and said, "Mr. Tessmann, so glad to see you again. Remember, I was so rough once, and I still want to apologize." So he was a soft character, almost tears had come out of his eyes.

NEUFELD: Where was that? Was that in Huntsville?

TESSMANN: It was in Huntsville, yes, in the new area where Dr. von Braun lived last.

NEUFELD: Because, you know, I met his daughters in Hamburg last August. He has two daughters who live in Hamburg. So I talked to them about his life. But I guess they were still a little unhappy about the way he got tossed out in 1943 as a result of accusations made by the Gestapo, you remember.

TESSMANN: I don't know. I never heard about it.

HEIMBURG: Yes. Hauptman, what was it, a major, he was the responsible person.

TESSMANN: I know only Hauptman Harrig.

HEIMBURG: Hauptman Harrig.

NEUFELD: What was his name, Harrig?

TESSMANN: Harrig.

NEUFELD: Yes, I think what you're talking about is what you mentioned when I talked to you, is that Lieutenant Colonel Stegmaier--

HEIMBURG: --Stegmaier, that is the one.

NEUFELD: From the documents I see that he had a role, although nobody knew that at the time, in talking--but, Zanssen was accused of being involved with opposition people in the Catholic Church, by the Gestapo and SS, and I've seen the documents that show that Himmler became involved in April, May '43, and the accusation against Zanssen. They never proved any of these accusations, but Zanssen went away after that.

TESSMANN: I never had much to do with later General Zanssen at all. But I was assigned a bicycle, you know, to go around in the whole area. And once a month there was an Appell, as we called it, Hauptmann Harrig was in charge of. So he had to look over the bicycles, whether they were really shiny and clean, and my bicycle was so dirty, and he reported it in writing to the commander. So I again had to see Zanssen, you know. And then I entered his office. "Come closer, closer, closer," and he was there, you know, and he was hollering toward me, and he came closer and closer to me, so I dared to take my handkerchief and dry my face, and then he got so red in his face and his voice got louder and louder.

NEUFELD: All over a bicycle.

TESSMANN: All over the very dirty bicycle, yes. And I was not a military person, you know. I was in civil clothes. And he must have hated us. That was my impression.

NEUFELD: He was uncomfortable with the civilian scientists. Zanssen was uncomfortable with civilians?

TESSMANN: That was also my feeling.

NEUFELD: Did you know Stegmaier at all?

TESSMANN: I had met him once, a very wonderful friendly man. And I had some work to do with some of his people, Hauptmann Hoffman, and others you know. He was in charge to put the first V-2 battery together for the V-2 launch site, a three Aggregat battery, and my office, located after the air raid in Koelpinsee, one of the little villages along the shore line--

NEUFELD: Coast?

TESSMANN: The coast line. There was Peenemünde, Karlshagen, Trassenheide, Zempin, and then Koelpinsee, that's where I lived and had my office. We occupied a restaurant and put all the drawing boards in the beautiful restaurant.

NEUFELD: That was after the air raid.

TESSMANN: And that's where I was put in charge because no facilities had been built and planned so much any more, so the office, since I had designers, we were put in charge to design ground equipment. For instance, one of the NASA designers, he got a heart attack recently, Theo Vowe here, he designed the complete launch table of the Meillerwagen. The launch table was attached to the wagon, and when you erected the vehicle it was immediately put on the launch table. Now, it was a pretty complicated deal because the launch table had to be turned and revolved in order to put the vehicle in the right azimuth position, they called it, so we had to launch over a distance of, what was it, 250 miles and the azimuth position had to be put in very accurate position.

NEUFELD: Really.

TESSMANN: It was pretty complicated. Now, this had to be turned; on the other side, you had so many other hardware for the vehicle attached to it. For instance, the cable mast, arm, after the command was given, the cable mast swung back. Now of course, you can do this only in the right position and not in the side position. So that fellow had to sweat it out, all kind of requirements that came up at the same time. In the field the army, of course, they had to depend on power they got from their own generators, and the power current was delivered to the vehicle. In order to run the gyroscope you had to bring cables up to the instrumentation section and other important connections. There was, I recall it, a big Stotzstecker, you know, with all kind of electrical and mechanical connections, and that, before you give firing command, had to come out, to be pulled out at the last second or so. This was a spring action, of course, a very simple spring action. And things like this. Then later again, facility planning came up again. Personally I was then involved again in facility planning in Austria, in Voecklabrueck. No, this was earlier. I mean, in Gmuenden,

Ebensee, you know, where we had a mind to have underground facilities with one test stand, of course, outside like our static test tower at Redstone Arsenal outside, where we would install the complete V-2 underground, get it out into the test position, run a test and get it back again in a hurry!

NEUFELD: Was that the facility that had the code name Zement?

TESSMANN: Oh yes, yes, Zement, you are right. That was near Gmuenden. There was a very huge lake, Ebensee, most beautiful area, mountain area, oh, it was beautiful! Each time I had to go on business trip, I was so happy I was there. It was like going on vacation.

NEUFELD: Is that in upper Austria, lower Austria, or over towards the Tyrol? I don't know where that is really.

TESSMANN: A shame, but I couldn't even tell you either. I would have to look it up in an atlas.

NEUFELD: So you were involved in planning that underground facility.

TESSMANN: You know, I only can tell you, it was not very far away from Vienna because I had business in Wiener Neustadt. At Wiener Neustadt we had a liquid oxygen plant [Rax-Werke] and occasionally I was called over, I don't know why, I was not an expert, but I had connections so I called on our expert, Mr. Georg Utpatel. I don't know too well what was wrong. Anyhow, he had come and he straightened out. Something was wrong with the byproduct, you know. If you produce liquid oxygen, you get as a byproduct gaseous oxygen of course and nitrogen, N_2 we used to pressure the LOX tank, and fuel tanks with N_2».

HEIMBURG: You used nitrogen in the production, in cooling down, and let it go as a gas again, so you do not use the ratio as one in four parts, so you use it in cooling, since you have start out with liquid air, and then you distill the liquid air, and in doing that you use the cold, the liquid nitrogen in order to cool down the incoming air.

NEUFELD: Right, so that you recycled the nitrogen.

TESSMANN: Something probably did not recycle correctly. Anyhow, Georg finished this job, and I had to continue to go to Project Zement. Oh, by the way, at Project Zement now was Papa Riedel again. He was put in charge to collect all the information, you know, and keep contact with the architect office at this time that was selected, I don't know by whom. I even never met any gentleman of this architect's office, but only dealt with my former boss Walter Riedel.

NEUFELD: Was Riedel down there at Gmuenden, or was he at Peenemünde?

TESSMANN: No, he was then down in Gmuenden, at Ebensee.

NEUFELD: That would have been in 1943, '44.

TESSMANN: Oh, that was very late, yes. Very late.

NEUFELD: I had a question with regard to him. I don't have this story quite straight yet, but he was more or less supplanted by Walter Riedel III, I gather, as chief designer.

TESSMANN: Yes.

NEUFELD: In about '42.

TESSMANN: Was it '42?

NEUFELD: I think so, I think it was '42. And then I was told, and I don't remember now who told me the story, that he was put on this production drawings project, with Stahlknecht, the so-called Nachbau-Direktion, and that that didn't work out very well.

TESSMANN: Yes, you are right. This he was involved in. And he had his office not in Haus 4 at the time any more. They put him in a kind of Inspector uniform, I don't know, Inspector's uniform. Anyhow he didn't feel too well, and I felt kind of sorry for him a little bit because he lost his position. He was not that bad because technically he was okay, he was good. No question about it.

NEUFELD: Yes. I've been told that he came into conflict with people partly because he wouldn't get along with Diplom-Ingenieure and so forth. He didn't like people with big titles, Doktor-Ingenieure. That's what a couple of people have told me, that he didn't get along with some people I guess, huh?

HEIMBURG: I think he was once in a while he was real stubborn."

TESSMANN: That's the right expression. You know, little things, he got so carried away.

HEIMBURG: Carried away with little things. And that made him intolerable for others who said, "I cannot work with him."

TESSMANN: One day I remember, you know, whenever a set of drawings was finished, I was supposed to see him so he could initial and approve the design, more or less. And then once he

took his finger and pointed to one word or something. He said, "That's wrong, that must be wrong, that cannot take the force, you know."

I said, "Mr. Riedel, hold it a second. I made personally the calculations. I just know all the equations too well, and by the way, to be sure, I went to Mr. Wettin." He was our chief stress analyst, and I had him check this over again, and he turned this over to another fellow, Mr. Wischhoefer, and he checked it over. He said, "That's fine, you have quite a good safety margin."

So I went back and told him the whole story, what I had to go through, and how much time I lost on account of his remark, and he got so darned mad, he threw me out and this was probably the last time I went into his office. And somehow it was carried to Wernher von Braun.

HEIMBURG: It was not only one case, there were others who had difficulties to work with him, including Thiel.

NEUFELD: So that Papa Riedel was more or less displaced because he couldn't get along with people that well. Is it true that when he was transferred to Nachbau that there was a problem with his first version of production drawings? Or do you know anything about that?

TESSMANN: No.

NEUFELD: And so later on he then turned up with this Project Zement.

TESSMANN: That's where they put him. They needed someone who had enough knowledge about the overall, and this no doubt was Mr. Riedel, Papa Riedel. He was a very fine and devoted family man and a very good father to his children, son and daughter. His wife was a great lady.

NEUFELD: The plan with Zement was to move the facility from Peenemünde underground, the whole facility or just a part of it?

TESSMANN: Even that had nothing to do with Peenemünde at this time. I think. It was just another plan. You know, in case of emergency, we could continue with production of hardware and simulation tests, ground component simulation tests and overall static testing of single engines as well as complete vehicles.

HEIMBURG: It was different organization, completely independent from Peenemünde. Rickey --

TESSMANN: Oh yes, Rickey.

HEIMBURG: --was the one who was in charge of this organization. And if he needed help, he called on Peenemünde, and Peenemünde had to send somebody to help him out. But the organization was absolutely separated from Peenemünde.

NEUFELD: So you think that that facility was a part of Mittelwerk or was under Mittelwerk.

HEIMBURG: Under Mittelwerk?

NEUFELD: Because I'm not clear on that. Seems like on some places they're saying that they wanted to evacuate Peenemünde to Zement. Of course, in the end it was never used.

TESSMANN: I never heard about this story, no. And I was so close to it.

HEIMBURG: It could be that Dr. Schilling, you've heard his name?

NEUFELD: Sure.

HEIMBURG: That he knows details about that. Schilling would know.

TESSMANN: Oh yes, right. Dr. Schilling, my last boss in Peenemünde. What a great and wonderful gentlemen and friend.

NEUFELD: And Schilling is still alive?

HEIMBURG: He's still alive. I have his address, if you need it, even his telephone number.

NEUFELD: Where does he live?

HEIMBURG: Massachusetts.

NEUFELD: Yes, I think he would be an important person to be interviewed.

HEIMBURG: You can ask him. I believe these are details Schilling knows.

NEUFELD: So as far as you're concerned, that was always a facility that was supposed to be for Mittelwerk, or something, an underground--and I know that in the end they used it as a tank factory or something. That's what I've read, at any rate. It was converted in 1944 in the last days of the war.

TESSMANN: But actually, all the time I had to go to the place, nothing was under construction. Nothing.

NEUFELD: That would have been in '43.

TESSMANN: There was even not an architect's office or construction office. It was only Mr. Riedel, you know. He had a one room office where he collected all kind of information specifically sketches and drawings my office made, proposals, you know, about how to do it. And in this area also another friend who passed away, architect by profession, Mr. Hannes Luehrsen was very much involved in this project. He planned, I remember, our parkway.

HEIMBURG: In Huntsville.

TESSMANN: In Huntsville.

NEUFELD: Really.

TESSMANN: People, business people didn't like it at all.

HEIMBURG: Good as an architect but as a character, lousy.

NEUFELD: Another person who was difficult to get along with. Well, Papa Riedel came back to Peenemünde later in the war, or did he stay down there?

TESSMANN: No, I don't remember. I was already in Landshut at this time.

NEUFELD: But I meant after Gmuenden in '43, '44.

TESSMANN: I never have seen him any more. I was very very happy when my wife wrote me a letter, I was in Aberdeen already, in the United States, when she wrote Mr. Riedel had shown up in Landshut, and "we took care of him." My wife and another lady, Mrs. Schulze, invited him for lunch, you know. And he at this time didn't know where to go. Probably, my wife thought he tried to go back to some close area to Peeenemünde because somewhere in this area he was supposed to have his family, his wife and a son and a daughter.

NEUFELD: He went to Britain.

TESSMANN: A son and a daughter. Wonderful kids he had. A wonderful wife.

NEUFELD: He ended up working in Britain for the rest of his life, Walter Riedel I, that is.

TESSMANN: Walter Riedel I.

NEUFELD: Now, I'm trying to remember. Were you there when the

first A-4s were launched in 1942, do you remember the very first launches?

TESSMANN: Oh yes, I remember it too well. I was on top of the Test Stand Number 1 platform, with a fellow worker Mr. Kurt Patt, the concrete platform, with another fellow, Patt, not alive any more either. We just wanted to see it from direct short sight without looking through binoculars. That was not so clear. And we wanted to have the overall impression. So the launch site was not very far away. It was a beautiful takeoff, countdown. Everything was fine and the takeoff was so clean and clear. And suddenly the whole darned V-2 started to wiggle over into our direction! And later, we were told, the pump or the steam generator kicked out and so the pump didn't deliver to the combustion chamber any material; it just dropped like a rock. But very close by. And that was quite an explosion. That was one of the first launches. And then there was another one, almost the same picture. General Dornberger and quite a number of other officers were on top of one of our large assembly buildings of Test Stand Number 7. And finally the vehicle also moved over into their direction, and one of the engineers told me later, "You should have seen our general! How he took a powder, and all his people, you know."

NEUFELD: Dove for cover at that point.

TESSMANN: Yes. There was not much to dive for, but at least they jumped back into the opening, you know, went down some staircases to a safety area.

NEUFELD: It sounds like you were lucky to never have one fall back directly on top of Test Stand 1 or something, that it could have happened.

TESSMANN: One, it destroyed very much our pump station for the Test Stand Number 7 to deliver cooling water to the double side deflector.

NEUFELD: Do you remember the first successful launch, the famous one in October '42?

TESSMANN: I think, I remember talking about it, but I hadn't seen it from near distance. I probably heard it from the beach in Zinnowitz. You know. Because all the visitors, vacationers, suddenly, they were standing and listening, and sure enough, the thunder came through to Zinnowitz, and I knew it was a launch. And pretty soon after you could even see a tail section coming up, the long tail of the flame, the jet.

NEUFELD: In other words, there were still people going to the beach resorts there.

TESSMANN: Yes.

NEUFELD: Until the air raid, when they evacuated everybody. To the other beach resorts --

TESSMANN: Zinnowitz was a very famous place. We had huge hotels and wonderful vacation arrangements, you know, and restaurants, very nice. That's where I spent my best years, young, healthy, and full of energy.

NEUFELD: So it was a nice area in terms of facilities. I think sometimes the picture of the place is given as so isolated. People have forgotten it had been a beach--at least, down the island in Zinnowitz, and Koserow--had been a beach resort.

TESSMANN: Yes, down from Zinnowitz, and then you go close over Banseen and then Herringsdorf, Ahlbeck, and finally the huge city Swinemuende, there it was great. It was beautiful. Today even, the east people from East Berlin, they visit this area very often whenever they have a chance to get reservations.

NEUFELD: The summer resort, the summer beach resort--

TESSMANN: --the daughter of a friend of mine, she lives in East Berlin, and she and her husband spent their summer vacations mostly very close to where I used to live in Zinnowitz or in Koserow, or Uekeritz.

NEUFELD: Yes. So that many of you lived that far down, towards those beach resorts, right?

TESSMANN: Oh yes. Yes.

NEUFELD: Even earlier in the war?

TESSMANN: That's where our Werkbahn, our little train, I call it a milkrun collector, you know, wherever you have seen five or ten houses, the train was stopping, and some people came and used the train, and then it continued to the next little place.

NEUFELD: That was the local train that was used as a kind of commuter train.

TESSMANN: Yes, it was an old, very loud and stinky diesel locomotive, and some very old cars from the German Reichsbahn, you know, they got for nothing practically. Boy, they were so cold and so loud. You always thought they had seven or five corners on their wheels. But since I was in this business, one day I stepped out and looked at the wheels, but they looked so nice and round to me, so I couldn't understand the noise or they must have put up the tracks in ten feet sections instead of as it

used to be in 50 to 60 feet sections.

TAPE 2, SIDE 1

NEUFELD: Now, I have to reconstruct a little bit the important parts of what we just missed when the tape stopped. So you were saying that on the working level, the relations with the Luftwaffe were pretty good.

TESSMANN: They were very good, yes.

NEUFELD: And that some of the people who lived in--but you had some Luftwaffe people who lived in the bachelor quarters in --that you remember, or was it Mr. Heimburg remembered that you had some Luftwaffe people living in the bachelor quarters?

TESSMANN: Mr. Heimburg remembers that we had in our living quarters some Luftwaffe or Werk West people living.

NEUFELD: You didn't have much to do with them?

TESSMANN: I didn't have anything to do with them.

NEUFELD: And you didn't even really know what was going on over there?

TESSMANN: No. I did not have any idea. I saw only airplanes going up and landing, but never knew exactly what was going on.

NEUFELD: There was a fence between Werk Ost and Werk West literally, on the grounds, that divided the two?

TESSMANN: Not that I remember.

NEUFELD: Do you remember that? Was there a fence, Mr. Heimburg?

HEIMBURG: There was a fence between east and west.

TESSMANN: Oh, is that right?

HEIMBURG: Yes. There was a fence.

NEUFELD: And how could you go from one to the other if you wanted to walk there or take a bicycle? Were there roads?

HEIMBURG: There were roads. There were roads. I only want to mention, the two from Werk West, Czerny and Gruber.

NEUFELD: Czerny. I think I know that --

HEIMBURG: And both worked in West but lived in the bachelor

quarter.

TESSMANN: Yes, because nearby there was the Fischer Kantine. You know, they cooked the watery soups.

HEIMBURG: Not only that, you had an Officers' Club, and they had one eater who did first go to the Kantine Fischer for lunch, and then he went to the Officers' Club. That was Oberth. He had a tremendous appetite.

NEUFELD: Hermann Oberth.

TESSMANN: Hermann Oberth.

NEUFELD: Did you hear that he just died?

TESSMANN: Yes, he passed away.

NEUFELD: Just at the end of December. 95 years old.

TESSMANN: We had seen him a couple of years ago. He, with daughters, came to the Space and Rocket Center.

NEUFELD: Did you see much of him at that time, at Peenemünde, when he was there? He was only there for two or three years in the middle of the war, I guess. Hermann Oberth, did you know him at that time?

HEIMBURG: Not during his Peenemünde time. You may have known him.

TESSMANN: Yes.

HEIMBURG: I believe told you that when we had this explosion in Vorwerk Sued, I got the task to notify Oberth, take him along to the funeral of his daughter.

NEUFELD: Yes. I remember your telling that anecdote in your interview, yes, when you took him down. You had nothing to do then with the joint projects, with the air force, past the construction phase, right? Wasserfall, you had not much contact with?

TESSMANN: With Wasserfall? Oh yes, I was involved in one of the test stands, Test Stand Number 6. The Wasserfall vehicle had entirely different propellants. And there were specific test position to run, component tests, fueling tests, even that firing static test, I don't remember, but mostly component testing. But nearby there was a launch site. It was a launch table I had to do something with also, design. Some of our people --

NEUFELD: --that was the launch site for Wasserfall.

TESSMANN: Wasserfall, yes. It was not a big deal. It was an instrumentation out of a trailer, and just a simple structure table, but the vehicle was held down by explosion bolts, you know. And now when you wanted to give the start command, you know, you had to push another button, and all the explosion bolts would have to go. But one or two did not at this time. So the thrust developed, and the whole darned vehicle tilted over on the side, and there was the only test run I had seen. It was a darned accident. It should not have happened. The explosion bolts were not reliable at all!

NEUFELD: I've heard of another Wasserfall test where it took the launch table with it, attached to the rear end.

TESSMANN: That's the very same, but it is not so. You could not take this heavy launch table.

NEUFELD: It just tilted.

TESSMANN: It just tilted over, you know. And there she was, flat on her belly.

NEUFELD: And exploded, I assume.

TESSMANN: No, there was no explosion.

NEUFELD: Didn't explode, huh?

TESSMANN: No. There was a fire, yes, in the lower section. Close to the tail. But there was no explosion.

NEUFELD: Were there particular difficulties in handling nitric acid, which, you know --

TESSMANN: Only insofar as all the hardwares, you know, they had to have special material, I mean, specifically, the gaskets. We had gasket problems; there's no question about it. We had gasket problems on the liquid oxygen side. It got brittle, and on the Wasserfall, you know, they got eaten up.

NEUFELD: So it wasn't necessarily harder to deal with.

TESSMANN: No. Otherwise people handled the material like liquid hydrogen. Of course, the operators who fueled the vehicle had long leather gloves and aprons, you know, just as a precaution.

NEUFELD: I guess, in that sense, because you had not only the cold problems but also the problem of explosion from liquid oxygen coming in contact with grease or oils or things like that.

TESSMANN: Or combustibles, you know, even wood or any other old material laying around.

NEUFELD: It wasn't harder to deal with that than it was to deal with nitric acid. Just a different set of --

TESSMANN: --well, I never worked out in the field. Except a little bit in Kummersdorf, where I had the chance to make a layout and the final design of a rotary test position. You know what we did, we wanted to find out how the engine for a fighter would work under speed and rotation, you know. Normally you took our so-called potato schnapps as a coolant for the engine, so it went through the engine, and then it was put into an injector and injected into the combustion chamber.

NEUFELD: Yes, through the injector.

TESSMANN: Now, if on one side we mounted the engine, in the middle we had a little steel house, you know, for operation and some instrumentation, and on the opposite side to balance out, to counter it, there were heavy bottles with nitrogen for pressurization. And so the whole deal went around in a circle, and the operator was Dr. Wernher von Braun. He was sitting in the middle, and you know the whole darned deal running swinging in full circles and we are all, everyone was looking for a good heavy pine tree to observe the test runs

NEUFELD: Was he sitting on the end of the arm?

TESSMANN: No, he was sitting in the middle, where there was only a minimum of movement.

NEUFELD: As the operator.

TESSMANN: He was the operator. He was sitting in the middle. He didn't feel any big movements.

NEUFELD: He didn't rotate with the device.

TESSMANN: No, but the engine did.

NEUFELD: That was the engine--

TESSMANN: Fliehkraft. How do you call this in English? He had to check the Fliehkraft [centrifugal force], how the fuel gets relocated out of its position, you know, just by acceleratoring it. Because if the engine is really the engine for an airplane, you know, it feels all kind of different movements all the time.

NEUFELD: This was the engine that was also used for the airplane

tests?

TESSMANN: Yes. Later in Peenemünde on our Test Stand Number 4, where Mr. Guenter Haukohl, who was the test engineer at this time.

HEIMBURG: The idea, before the war, or before the German army was in France, the question was, our aircraft do not, cannot go too far, not to Great Britain. And if we create an auxiliary device, then we can do that, and that was the idea, to get a device to the aircraft to help the aircraft to start so that you get a bigger range. That was the idea before France was occupied.

TESSMANN: This is probably the main idea, but when I was put on the job first, the idea was the following, of the Heinkel people, you know. There were some guys from the company Heinkel in Kummersdorf. They worked with us. The idea was to put a fighter plane up very quick, take it out of its camouflaged wooded area, and put it in the open field and just take it up without building any special field, concrete runways.

NEUFELD: You mean, was it a vertical takeoff or short takeoff?

TESSMANN: It was supposed to be a very short takeoff. It was supposed to be a very short takeoff. You roll just a little bit across the meadow and then take off. This was the idea. I never have seen an actual test with an airplane, never have seen it.

NEUFELD: Because I think what you're talking about is two different things. Mr. Heimburg, you're talking about the Starthilfe, where they went into--you probably remember that too, Mr. Tessmann--where they had the units to lift bombers off the ground.

TESSMANN: Oh, this was Starthilfe.

NEUFELD: Yes. That came later, but there was also the takeoff--

TESSMANN: --takeoff aid.

NEUFELD: Yes, there was also the test with the fighter aircraft, the Heinkel aircraft, right, HE 112, HE 176.

TESSMANN: I don't know.

NEUFELD: The first rocket test with aircraft, I think, was when they put those engines on those Heinkel fighters. This is what you're talking about, right?

TESSMANN: Yes.

NEUFELD: Because I know they flew those tests, they flew some tests out of Werk West. '38, '39.

HEIMBURG: I guess that was what, H^2 O^2.

NEUFELD: Well, there was a Starthilfe with alcohol and liquid oxygen. They later also built one, they also built a Starthilfe, but that was a Walter motor, I think.

HEIMBURG: Yes, right.

NEUFELD: But then there were those engines that were used with the Heinkel fighters. They just tested them in the air.

TESSMANN: Well, I recall, I think it was the same propellant as we tried to develop with small research and development engines.

NEUFELD: Yes, those were the first versions.

TESSMANN: Potato schnapps and oxygen. Ethyl alcohol, is the correct name.

NEUFELD: You remember those early dealings with the Heinkel people, like at Kummersdorf, right?

TESSMANN: Yes.

NEUFELD: Did you have anything to do with the Starthilfe?

TESSMANN: No. No.

NEUFELD: Just looking at documents, I see it's still going on as late as 1941 or so. That's probably about the time that they stopped. They had those units that dropped off the bombers. I guess that was the Starthilfe system they tried to work out. They helped the bomber off, and then they dropped them back to the ground.

HEIMBURG: If you want to know that, you have to talk to Haukohl. Because he worked on that. And he came, did he come from Heinkel?

TESSMANN: He came from Heinkel, yes.

NEUFELD: Guenter Haukohl. How was he in terms of his health and so forth?

HEIMBURG: He's a good chap.

NEUFELD: Is he interested in talking to people? Not everybody here wants to talk to interviewers.

HEIMBURG: I have to tell you a story here. When Rudolph left United States, he called Haukohl and told him, "I am leaving the United States. These are the reasons. If you want to know more details, you have to talk to Rees. I only call you because you are the next one to be contacted." And he was contacted, had a lawyer, and the lawyer told him, "Look, if you want to do that well, you have an accusation. If you have an accusation, that's what you send here first before he talks to you." Never heard of it again.

That was years ago, years ago. And he had sent a letter maybe two years ago, he want to have a question answered by OSI, and about three or four months ago, he got an answer on that letter. The letter said, "There is something against you. We cannot answer your question."

Okay, since you ask, I do not know if he wants to have his name used. This is the reason I tell you that story.

NEUFELD: Right. That's why I asked. I know that some people don't want to talk, and if that's their wish, that's fine.

TESSMANN: You see, Guenter Haukohl came together with his superior, and his name was Mr. Walter Guentzel. And his helper Mr. Schoen. These three fellows I remember well, Guenter Haukohl, Guentzel, and Schoen, yes.

NEUFELD: They went back to Heinkel days. They went back to Heinkel?

TESSMANN: No, Guenter stayed with our organization. He later was in Peenemünde as a test engineer on our Test Stand Number 4, where we continued with the Starthilfe programs.

NEUFELD: Yes, that interests me because for one thing, I'm trying to understand what other projects there were besides A-4. Sometimes you read about Peenemünde and A-4 as if they were identical, and of course there was, you know, Wasserfall and there was Starthilfe and there were a few other things, although they were all less important, clearly. And also relations between the Luftwaffe and the army interest me: how the cooperation worked and whether there was any conflict there. That's why I'm interested in things like Starthilfe because, you know, I want to see what these other projects were.

TESSMANN: I never had, I must say, I never had time to look around or to listen to political things. I had schedules and schedules that came up every day, you know, and if I did not produce in time, I had all kind of --

HEIMBURG: --difficulties --

TESSMANN: --people in front of me. I mean, I never feared Wernher von Braun because he was a fellow, I tell you, that's only once in my lifetime, to work with a man like him. He had tolerance. He knew something about tolerance, you know. When I complained once about too much work and not enough helper, he said, "Tess, I tell you something. You are not supposed to work. You are a supervisor. Why don't you let the people work?" And that was the first and last time I complained to him about not having enough time or not enough people.

NEUFELD: But was he being realistic, or was he joking?

TESSMANN: No, mostly he was very honest, very serious. Or he could be very kind or he could be tough too, I tell you this.

NEUFELD: When was he tough?

HEIMBURG: I give you an example. I had a problem, and I had three solutions which I could take, and I was not clear in my own mind, take this, take this, or take this solution. So I thought that would be ideal to discuss it with von Braun. Von Braun listened to me. He said, "Look. This is not my problem; this is your problem. I tell you afterwards if your judgment was right or wrong." He was a realist.

NEUFELD: As far as your experience goes, was he ever tough with you?

TESSMANN: No. I wouldn't know. I don't remember.

NEUFELD: You never really dealt with those problems at his level in general?

HEIMBURG: Oh yes.

TESSMANN: Well, of course, he came around and complained if something was not the way as he thought it should. Very much so. But it didn't happen too often, I am proud to say.

NEUFELD: How was his influence felt in terms of making the place run well? You know, that's kind of a vague question, but what way did von Braun's personality shape the atmosphere or influence the way people worked? What was the influence of von Braun's personality?

TESSMANN: His tremendous knowledge and his way of to convince people and to discuss the most complicated things in a very simple and understandable way. He never had shown to anyone a bossy behavior, but rather had always been a wonderful, kind, and loyal friend to his fellow workers.

HEIMBURG: That was the biggest advantage of von Braun. The most complicated thing, he could explain in very very simple terms, and that happened to NASA Headquarters more than one time, that NASA Headquarters had discussion with our lawmakers, mainly on the monetary side, and when they explained something, they were interrupted, "Why don't you send us von Braun? He can give us a better explanation than you." Which did not give him the best connection at NASA Headquarters, once in a while. After they had gotten this information.

TESSMANN: He had a good sense of humor, too. I tell you one thing that just comes to my mind. We had scheduled a static test run on our Test Stand Number 7 one late afternoon, and so von Braun always wanted to be present, not always, but in this specific case. There was a special test set up with the so-called Federfesselung in order to apply some simulated forces to the vehicle, to simulate pitch, yaw, and circular forces and movements, and then the guidance system was supposed to get it back in its original position. And he wanted to see how this Federfesselung deal worked, which was a pretty complicated calculation effort by some companies, of course. I couldn't do it myself or our people. It was done in Schweinfurt by a special spring company. Well, anyhow, he was late and his secretary called Mr. Fehrenberger, who was the test engineer in charge, and he was complaining, and he was nasty to the secretary. Well, anyhow, she said, "Wait another 20 minutes or so, then he will be through; he has a long distance call." So he had to replenish liquid oxygen because we lost quite some amount, and it was supposed to be a long duration run of 60 seconds; we called that long duration.

NEUFELD: It seemed long at the time.

TESSMANN: It was long for us. Well, he came and in the meantime we had gathered together all kinds of fellow workers and talked about all kinds of things about the test run. And then suddenly von Braun showed up, you know, he came and saw our crew. He came, he said, "What's going on here? I thought you were working." "Here we have been waiting for you, you are late and you caused us tremendous problems, you know. Again we had to top off liquid oxygen."

So okay, nothing else, but anyway he reported from his trip to the Wolfsschanze in Prussia where he had shown a film and reported about the success of the V-2 launch, to the Fuehrer and other higher officers, and he said how it came out, and how people reacted and so on. And one of the fellows said, "Dr. von Braun, I don't understand, how do you do it? You just go in front of the Fuehrer and high officers and just talk so freely, how do you do it? Do you have a drink before or what do you do?" And von Braun said, "Oh, no, no, if I have a drink I wouldn't

know what I'm talking about. All you have to, you have to have enough imagination," he said. "What do you mean by imagination?" "You just imagine all these guys in front of you standing in their underwear and it's such a sad and ridiculous picture," he said, "that you lose all your respect and feel free." I remember this so well.

NEUFELD: Yes. That's, of course, a famous visit in July, '43. So he was, at that point did he seem like he was very upbeat, optimistic about the fact that he had received -- ?

TESSMANN: He was always optimistic, yes. But later then, it had shown that they cut our money, and we didn't get enough material because the money and material was shifted over to the air force for fighter production. And we had tremendous problems to get the material in time.

HEIMBURG: What you are talking about was long before that visit of von Braun to --?

TESSMANN: Oh, could be, could be, yes.

NEUFELD: Well, there were also problems in '44, too, when for a short time, priority shifted from V-2 to V-1.

HEIMBURG: Yes.

NEUFELD: So it could be in '44 as well.

HEIMBURG: But we were less connected at Peenemünde at that time than the Mittelwerk. They were really in bad shape at that time.

NEUFELD: Yes. Yes, they lost priority for a while.

HEIMBURG: For a while.

NEUFELD: Yes. But since you, in fact both of you were involved with test stands, you didn't have much to do with putting the A-4 into production, right? Because that was such a huge job.

TESSMANN: That's what Arthur Rudolph was responsible for. Very much so.

NEUFELD: Yes. But I get the impression that also very many people in Peenemünde themselves were having to spend most of their time working on contracts and subcontracts and drawings for new versions of the same part and so forth, right? The whole job of keeping the thing in production.

HEIMBURG: I could give you one example, where we were involved through the production. You know, we had the Test Stand Number 8

for combustion chambers only. Combustion chamber had to be, you might say, recalibrated, because the pressure losses were different at each engine since they were hand made at that time. And the following test stands were not ready yet, and they were waiting for combustion chambers for the Mittelwerk, and we had a problem on Test Stand Number 8 and called von Braun and told him, "We have to stop it because we are destroying the test stand now." He said, "Don't stop it. Go as far as you can. Work until it's impossible." And we did that, remember? We destroyed the concrete deflector-bed, and many pieces flew toward the Baltic Sea.

TESSMANN: Yes, I remember that.

HEIMBURG: That was when von Braun insisted, you have to do it because we have to deliver the engines, the combustion chambers.

NEUFELD: A question coming out of that is, there were, I've seen on a number of drawings and photographs, supposedly three circular areas. There were new test stands that were being built up more towards the west side of the island.

TESSMANN: Oh, this was Werk Süd. We called it Werk Süd. This was Mr. Rudolph's new fabrication area. And this was under planning and partly under construction. I also was involved in these two test positions. But one was only built, not even ready, because all the instrumentation was missing. All other hardwares were around, and there Mr. Hermann Weidener was put in charge as a test engineer or a test director in this area.

NEUFELD: And those were test areas that were supposed to be part of Versuchsserienwerk.

TESSMANN: Right. Right.

NEUFELD: And only one was half-finished, and then never used?

HEIMBURG: This test facility was destroyed. And --

TESSMANN: --correct --

HEIMBURG: And then after they had that accident at Vorwerk Schlier, you know where a complete engineering staff was killed, Weidener and his people were transferred to that test position to repair it and run the tests on there.

NEUFELD: That was in Austria, right.

HEIMBURG: That was Austria, yes. Voecklabrueck/Voecklamarkt.

NEUFELD: Okay. So the plan was I should direct my questions

basically to him, but the plan was to test engines that were completed at the Werk Süd or in these test facilities.

TESSMANN: Our new Werk Süd complex, yes. It had not only two test positions I'm talking about, but had his own headquarters building in West Sued, a very huge hangar for overall assembly work and checkout work. There was a huge high hangar, you know, where you could put the complete vehicle into a superstructure vertically, and before you took it to the launch site, you built your gyroscope in and instrumentation panel. In order to check out with a certain force, you inserted the rudders, which are supposed to keep the vehicle in its pitch and yaw position. The rudders were exposed to the high temperature jet, and it worked like your rudder in your boat, you know. But the rudders had to be moved in some way, so they got the command from the gyro through a checkout panel and through an electrical connection. A solenoid got operated and either opened or closed, so when the command "open" came, the solenoid valve let an oil pressure through to piston actuator, you know, which then turned the rudder. Either way, whatever. We did not have computers at this time. It was a simple electrical connection from the gyro. Fritz Mueller should give you the complete and correct descriptions and facts.

NEUFELD: This was a test that was going to be done on completed vehicles coming out.

TESSMANN: Yes, before you send them out for testing or launch.

NEUFELD: Was that done also at the older assembly Zusammenbauwerkstatt?

TESSMANN: Yes, There a huge hangar of the main assembly-building was the same design in Werk Süd. It was a carbon copy in Werk Süd later.

NEUFELD: It was bigger, I gather, than the Werk Süd.

TESSMANN: It was a little bit larger because we had to reconsider, or we had to consider the future, the future, you know. As von Braun always used to say, "A good city planner does not plan for ten years, but he plans for 25 to 50 years in advance, and that's the same you have to do with your facility planning and design." That I remember so well; he told me before I started ever taking up my new job. I always followed it, but it was not easy to stick to because in most cases more money was to be needed.

NEUFELD: Now, that reminds me of something I hadn't thought about. In an article by Krafft Ehricke, there was mention that there was some long range plan to have a city of 30,000 people in

various facilities at Peenemünde, to make this into a research facility. Do you know any--you didn't hear about any of this? I've never seen a reference that backs that up.

TESSMANN: No, never.

NEUFELD: So when you were planning for Peenemünde back in '36, '37, so forth, you just were planning the facility --

TESSMANN: Mostly for the present needs.

NEUFELD: Plus some facilities were big enough to take --

TESSMANN: --to continue our works which had already been going on in Kummersdorf, and then with the growth potential going into the A-4 development.

NEUFELD: You built facilities large enough to take that, the hundred ton thrust motor that was projected.

TESSMANN: Our Test Stand Number 1 was actually the only one which could have taken it, dimensionally, as well as from the structure-side and foundation.

NEUFELD: And the Zusammenbauwerkstatt, I gather as well, was built big enough --

TESSMANN: --high enough --

NEUFELD: --high enough to take a vertical--vertically for the projected size of an A-10. Did those dimensions enter into the Versuchsserienwerk? Did they make those big enough?

TESSMANN: They must have. They must have, otherwise you cannot do real good planning.

HEIMBURG: That's a question for Rudolph.

TESSMANN: Planning means you have to know in advance, you know, how the future looks. So they had to work with the advanced projects office, find out about dimensions, at least dimensions. Details at this time of planning are not so important yet.

NEUFELD: But you know nothing about this other talk about a plan, master plan, for a big town connected to Peenemünde or anything like that. I've never seen any evidence to back it up, just a reference. Okay, I guess we're getting towards the end. I'm trying to think if we've covered the war, we've covered everything?

HEIMBURG: It could be that this was a discussion between Ehricke

and von Braun, just a conversation about planning the future, what should we do. So this could have happened, but not more than conversation. I never have heard it before.

NEUFELD: No real plans, you think, existed for that, just maybe an idea.

TESSMANN: I do not like so much, in our discussion, Dr. Neufeld, we mention so often people's names, you know. And occasionally not in a very rosy way. So--that's something I do not like at all, after this, in writing.

NEUFELD: Well, you can control who reads the transcript if you want. You can make conditions on who reads. But I think, in fact, out of all the people we've talked about, there really is only one example that matters and that's Walter Riedel, you know. And I don't think that that is so crucial --

TESSMANN: His children are still alive, and he has a wonderful boy, Hans Riedel--he is a great guy--and a fine daughter.

NEUFELD: It's only I think necessary to mention it in explaining what changes were made, in terms of why he moved out and why Walter Riedel III moved in. That was about the only case where, you know, it's even necessary to mention it, that he didn't get along with everybody. I don't think it's necessary to do anything more with that factor, those anecdotes, at all, you know. But you know, I respect the fact that you don't want to talk about people and then see the same story turn up --

TESSMANN: Of course, it's our conversation. You know, we talk, you ask questions, and then we react. But often when I was in interview and it later came out in writing, I said, "Why in the heck, why didn't he or she send me a copy first?" You know, after the interview, so many things go through your mind: boy, I forgot this, this should have been mentioned, and so on. Specifically, if you mention certain datas, you know, where you could be so wrong.

NEUFELD: Yes. I want to say a couple of things. Number 1, you will get a transcript. If you want to cut anything out, you have the right to cut it out, okay. That means that, in fact, Mr. Heimburg, yours will come probably in a month or two when they finish it. But you have the right to say "I don't want this in the written copy," and you have the right to say that you don't want this given out to anybody, you know, in terms of who reads it.

TESSMANN: Don't get me wrong, I did not mention anything which is not right or true, only what I remember after more than 48 years.

NEUFELD: No, I understand.

TESSMANN: But I do hate the personal discussion by names.

NEUFELD: You see, the thing is, from the standpoint of the historian, what's interesting about those things is just that in any human organization, you're going to have conflicts. Not everybody is going to get along with everybody else. And sometimes the conflicts help you to understand how things were organized, and you know, what frictions there might be, because that's just normal, you know. Nowhere do you have an organization where there's never an argument, never a disagreement, you know. So it's not--you know, I don't think in most cases it's really a problem. But you will get a transcript of this if you want to read over and say anything about what shouldn't be in it. Now, we were near the end of the war, more or less, I guess. I mean we covered almost everything.

TESSMANN: And don't forget, in my case, it's not so easy to go through a stroke and then come up and remember things which had happened so many many years ago. In between you had your life too, and certainly lots of problems also.

NEUFELD: The thing about that is --

TESSMANN: --even working with that guy.

HEIMBURG: Once in a while a difficulty, right?

TESSMANN: Once in a while I have to mention that, so you shouldn't forget about it.

NEUFELD: As far as the accuracy thing is concerned, I understand that memories are not perfect. I mean, that's part of doing oral history, that you have to check what people say against documents and then say, well, this--I think most often it's just a matter of dates particularly. It's hard to remember exactly when things happened. But you can often find out when it happened from documents.

TESSMANN: Dr. Neufeld. I want to make one proposal for whenever it's out in printing. Why don't you try to get you a fine copy of complete Germany and show specifically the location of Peenemünde, and then of Peenemünde make an extra large area to show this in details, how it's located, because there are so many details, people like to understand why exactly this area or that area for the overall Area Planning and certain arrangements in locating buidlings and/or the test complexes!.

NEUFELD: Yes, I think --

TESSMANN: They destroyed, you know, the government controlled bird sanctuaries and so on and so on.

NEUFELD: Well, I think that definitely you need a map, and of course, in Dr. Dornberger's book there's a good map.

TESSMANN: Oh, is there?

NEUFELD: We probably need another map again, definitely, of Peenemünde and also of sites elsewhere in Germany.

TESSMANN: I wish we would have a blackboard. I could make complete sketches about the location, and how the Peenemünde, the Peene developed and where.

NEUFELD: Yes, I remember the maps that have been printed in various books. But I would like to see something even more detailed, you know, the buildings you were talking about in the central part of the thing. But I must be getting close to the point where you're getting tired of being interviewed. Do you want to go on much longer?

TESSMANN: Well, as long as you have a backup, as we have in this case.

NEUFELD: I assume you don't want to go on too long or tire you out excessively.

TESSMANN: I guess I quit for today.

NEUFELD: Yes. Just one or two questions at the very end. I know you were evacuated in February or March of '45 from Peenemünde down to central Germany. You were evacuated when? Right at the end of January or February?

TESSMANN: It was in January '45, yes. So I had to go to Thuringia, to Artern. That's where I built up our design office, set up our design office again.

NEUFELD: And was there much to do there?

TESSMANN: It was in the building of the Artern newspaper. I got a very large room to put up drawing boards for some people, you know.

NEUFELD: And did you have much to do there? Or were you just passing the time?

TESSMANN: No, that never was the case.

NEUFELD: They kept trying to make you work.

TESSMANN: Yes. Yes, we had to deliver, and I had to work with an officer whose name was Schnackenburg in Berlin headquarters, and he was in charge of all the documentation for "as-built documents", you know. And these things I had to gather together for the special trucks and vehicles--the Meillerwagen transport wagons, and Firelight Panzer with all instrumentation, trucks. All this had to be continued, documentation, not so much research or new design work.

NEUFELD: The handbooks and so forth.

TESSMANN: Carry things together and put them together as documents. It was not boring, I must say, because at this time we learned, everyone learned lots of things he had worked on once but forgot about it, things, and then it comes back again, if you see your own work coming up again.

NEUFELD: Okay. Well, since I'm running out of tape and you want to stop, I think this would be a good place to stop for today. Thank you.