

NASA JOHNSON SPACE CENTER ORAL HISTORY PROJECT

ORAL HISTORY TRANSCRIPT

TERRY SLEZAK
INTERVIEWED BY REBECCA WRIGHT
BOERNE, TEXAS – JULY 29, 2009

The questions in this transcript were asked during an oral history session with Terry Slezak. Mr. Slezak has amended the answers for clarification purposes. As a result, this transcript does not exactly match the audio recording. The referenced photographs were provided by the NASA JSC Imagery Repository and Terry Slezak. [Photo Gallery]

WRIGHT: Today is July 29th, 2009. This oral history interview is being conducted with Terry Slezak in Boerne, Texas for the NASA Johnson Space Center Oral History Project. Interviewer is Rebecca Wright, assisted by Sandra Johnson. Thanks again for allowing us in your home this morning. We appreciate you taking the time for this project. We'd like to start by you sharing with us how your interest in photography began and how that led to a position at the Manned Spacecraft Center.

SLEZAK: I was interested in photography at a very early age. When we went on little trips, I used to enjoy taking pictures. Looking back on some of them now, they weren't very good. But later I went to school in Japan. My dad was a career officer in the Army so I went to high school there. Being in Japan, with all these wonderful things to shoot pictures of, I really got into photography very heavily there. I used to shoot a lot of stuff for school and friends at school, and I used to process and print my own pictures.

After I finished school in Japan, I went in the Army in Japan. Like only the Army could do, they sent me to Germany. I thought they would probably leave me there [in Japan], since I spoke Japanese fairly well and thought maybe I'd be of more use there. I went to Germany, and

went through Fort Sam Houston [San Antonio, Texas] here first to medical school. I was a medical corpsman in the Army, and then spent three years in Germany in Frankfurt. I started off in Bad Kreuznach and went to Worms am Rhein with the 2nd Armored Division. Then I went to Frankfurt, and then to Hanau, and back to Frankfurt, and then later to Berlin, and back to Frankfurt, and back to Berlin, and back to Frankfurt. Then the last year and a half or so I was in Europe, I was a soloist with the 3rd Armored Division Soldiers' Chorus. So we got the opportunity to travel around Europe and give concerts. We saw a whole lot more of Germany and other places than we would have ordinarily. It was nice. [I also got to study German at Wolfgang Goethe University in Frankfurt.]

Then I came back from Germany. What I really wanted to do was go to medical school, but couldn't afford that. But with my great interest in photography, I decided I would give that a go. So I went to the New York Institute of Photography [New York City] and studied commercial photography up there. I think later on I found out that in the Photo Division there were only two of us that had any kind of a degree in photography. It was Tom [F.] Brahm and me. Tom went to Art Center School out in California [Art Center College of Design, Pasadena].

WRIGHT: How did you get the job at the Manned Spacecraft Center [Houston, Texas]? How did you learn about that position?

SLEZAK: When I first got out of the Army, I think my dad suggested, "Why don't you fill out a Form 51?" Is that what it is?

WRIGHT: I think so. SF [Standard Form].

SLEZAK: It's been so long. [SF] Form 51 or 52. ~~For~~ civil service. You'll probably never hear from them, but if you do, and don't like the offer, you can always turn it down. But it's something." So I did that. When I came back from New York, I was a staff photographer for the *Daily Press* and *Times-Herald* newspaper in Newport News [Virginia]. Then sometime later I got a call from NASA to go for an interview. So I went and had an interview with John [R.] Brinkmann, who became our Division Chief. And he hired me.

WRIGHT: This was still in Virginia?

SLEZAK: Yes, this was still at [NASA] Langley [Research Center, Virginia]. It was still called the Space Task Group [STG] at that time. It was a funny thing, too; I knew Dr. [Robert R.] Gilruth before I went to work at NASA. We met when I was a staff photographer with the newspaper and I went over there on assignment. He had a wonderful house on a lake. If you are aware of this or not, Dr. Gilruth was the inventor of hydrofoils. He had a bunch of hydrofoil boats out there in his backyard. So we went boating on his hydrofoil boats. I shot some pictures, and met his wife. His wife was a very, very lovely lady.

Some years later, when Dr. Gilruth [then Center Director, Johnson Space Center, Houston, Texas] came around with his entourage to visit the Photographic Division, at that time I worked in the Photo Science Office with Fred [Frederick J.] Southard. Fred was supposed to give this big spiel about what we did. In so many words, they told me, ~~Just~~ "get lost." I said, ~~Well~~, "I know Dr. Gilruth." ~~Yeah~~, "sure you do!" So Dr. Gilruth came, and I had some pictures [of our boating] I wanted to give him. He came in and we got to talking. We kept going and

going. I gave him these pictures that he was really thrilled with. Finally whoever was watching his time schedule said, ~~Dr.~~ Gilruth, we have to move on.” ~~Just~~ wait a second.” ~~Well~~, we have to move on.” And he keeps going. Finally he says, ~~I~~ guess we’re going to have to move on.” And he says, ~~Well~~, come over and see me sometime.”

So it got to be a joke around the building that Fred was left standing there saying, ~~I~~ didn’t get to give my speech.”

WRIGHT: It was nice that you knew the big guy before you got started, before it got moved. Tell us about the move then to Houston. Did you come with the original STG, or did you come after?

SLEZAK: In fact, I carried the first board down here for the Photographic Division. Initially when I was hired there, I worked for Langley Research just about every day with a Houston Fearless [Corporation] flight analyzer camera. This camera was huge. It took two men to set the thing up. It had big arms with weights on the ends and it used an 8 x 10 [inch] glass plate. You would set this thing up and get it all leveled, and then we would track aircraft as they came in and made landings. As you moved this camera, it went click-click-click-click, and it shot a 1/2 inch strip of a picture on an 8x10 glass plate. So what you would have is all the topography in the background and about 20 little planes coming down. This is how they analyzed flight and they would make modifications to aircraft and so forth. That was a big thing at Langley. They did a lot of experimental aircraft things. I did this probably most of the time.

During that time at Langley, the only personnel in the Photo Division were John Brinkmann, Gene [Eugene G.] Edmonds, John [W.] Holland, Chuck [Charles L.] Nelson and me. That was it.

WRIGHT: Were you guys housed out at Ellington [Air Force Base] at the time? Is that where your facility was when you first got to Houston?

SLEZAK: Yes. But digression again here. While we were still at Langley, part of the time I worked with Chuck Nelson. He was the Laboratory Branch and I was the Photo Branch. I worked with Chuck Nelson, and we were most of the time printing and processing color prints. Most of these were liftoff pictures from [Alan B.] Shepard's and [John H.] Glenn's flights and other pictures associated with those two flights [Mercury Redstone 3 and Mercury Atlas 6], because we didn't have much of anything else going at that time.

John Glenn had a 35mm camera which, I found out later, was an Ansco Autoset. Scott Carpenter had a Robot Royal 35mm camera which might have been made by Zeiss [lenses by Zeiss], I'm not sure. They used this because it had a spring-driven automatic advance. Tech [Technical] Services [Division] at Langley made a large pistol grip with a shutter release cable in it so it could be operated with big gloves on and with one hand. I saw the camera one time, and I think that it was mounted on the grip upside down so that Glenn could get a view over the bottom of the spacecraft window. His movement was very restricted in the spacecraft.

At any rate, I think the pictures were backwards from their usual configuration. But it didn't make a whole lot of difference, because the pictures were only of the Earth's limb, which is just arcs of color as the Sunlight is bent by the Earth's atmosphere. These arcs just showed the various colors of the spectrum as he went from darkness into the daylight side of the Earth. These were quite spectacular at the time, as no one had ever seen these from space. Some people had seen these from high altitude flights, of course. The problem was that the film was color

negative film. We had no idea what color to print these pictures, as there was no reference. There was no gray scale or anything that anybody thought about shooting ahead of time. Chuck Nelson and I worked on printing a ring-around of various hues, and then John Glenn came over to the lab and picked out a set of these pictures. They became our masters. So whenever these photos were reprinted, we used these masters as the reference. They're probably so faded by this time.

Before the Space Task Group moved to Houston, we were given one trip down to the area to reconnoiter, and a last chance to back out of the relocation if we wanted to. Actually, some people did. There were some guys from Tech Services that I came down with, and then I never saw them again after we went back.

When we first moved down to Houston, we had nothing in the way of equipment. We didn't own a camera. Nothing. We worked out of the old Army Air Corps photo lab which was at Ellington. I don't think it had been opened since around World War II. Now I think possibly the [National] Guard might have used it at some time or another. It was a bit moldy in there. The building had been converted at one time, I guess around World War I—it had been a stable for horses, from the cavalry days. But it did have an old process camera with carbon arc lights. It was built into the building. The camera was so big you could walk into it. So we used this initially to make lantern slides. There were a lot of presentations going on at the time, trying to solve all the problems of the world.

Sometime later we started receiving equipment that had been on order. The first cameras that we received were 8 x 10 [inch] Deardorff cameras, big wooden cameras. There was basically no difference between those and the ones that Mathew Brady used during the Civil War, except the lenses were better. That was about the only difference. We used these since it

was the only cameras we had to shoot the site progress pictures down at the intended NASA site. We shot these pictures on 8 x 10 cut film. Pretty good size. And we had an old Air Force contact printer at the building there to print them on. So that was all we had. The only equipment that we really owned at that time was an 8 x 10 Deardorff camera, a large tripod, and a snakebite kit.

The snakebite kit was our standard equipment because there were a lot of rattlesnakes in the fields down there, but absolutely nothing else down there at the time. There were no houses, no buildings, except the old [James Marion] West mansion. When they dug the tunnels and started to run the heating, air conditioning, communications, electric lines, and everything, before they covered them over, these rattlesnakes would fall down into the tunnels there. We would be down there shooting site progress pictures, and every once in a while, you'd hear the ch-ch-ch-chhh [imitates sound].

WRIGHT: Hard to hold the camera still, isn't it?

SLEZAK: Yes, well, this camera was on a big tripod, so it wasn't going anywhere.

WRIGHT: You couldn't pick it up and run, that's for sure.

SLEZAK: No, not very well. We had a big old Ford white van, I remember. That was the only vehicle we had, too. There was no road. So we were going along, and whoever was driving, I said, "Man, will you slow down?" I was sitting in the back because we didn't want to take this stuff all apart, so I had this big Deardorff camera on the tripod sitting on my lap. We hit this

great big bump, and the camera flew up in the air and came down and went ka-whammo on me. Didn't do me worlds of good!

After the old Air Force commissary building had been converted, that was where we were housed for a good long while after we moved from the World War II lab. The commissary building had been converted to a photo lab, and we moved all of our Photo Division personnel to that facility. They had been scattered in buildings all over Houston. We had people in the HPC [Houston Petroleum Center] Building and the Farnsworth-Chambers Building and all over the place. In fact, our offices were in the Farnsworth-Chambers Building a long, long way from where we were.

In the early days when we got the lab in the commissary building up and running, we worked about seven days a week and at least 40 hours overtime per pay period, and sometimes more. It seemed like we just lived there. You could never catch up on the work, you were inundated all the time. Then much later, after we moved to our permanent photo lab at the NASA site, we found out that after we worked about 20 hours overtime, because of the way that NASA does their pay scale, we were working for about 50 cents an hour. So we started backing off, because by this time we had been doing this for some years and people were worn out. Your families rarely saw you for any length of time. My kids, for instance, I didn't see much of them because usually they were in bed when I got home—if I got home.

So I think we did this for a long, long time. I was working in the lab most of the time. I worked all different parts of the lab, in the still lab, and used to run motion picture, this and that. We found with a lot of the people, when we would go out in the sunlight we would get headaches. We just weren't used to being in any light. We felt like a mole after a while.

WRIGHT: Fresh air. All those chemicals and everything you were smelling inside the lab.

SLEZAK: I wonder if that isn't what has done in some of the people, too. A funny thing was some years later, quite a few years later actually—people used to call me from down at the library building [JSC Image Repository], which is now by the back gate there at NASA, and ask me to identify pictures and so forth, since I knew what these things were. In most cases it has the photographer's name on the work order that's still with the pictures evidently. So they would call me and ask me, "Who is this?" or, "What was this experiment about?" One of the guys called me one time, and he says, "We were going through a bunch of these old, old, old pictures. We were looking at these things and just marveling." They were all black-and-white. He says, "How did you get this wonderful tonal gradation and all this fantastic quality of these pictures?" And I said, "All we had was an 8 x 10 camera to shoot them with, so we shot them, and we made contact prints with chloride paper," which has this wonderful tonal range. This is what Ansel Adams used. So you can get some really beautiful pictures with that. He says, "We've been wondering about that for a long time."

WRIGHT: That's good to know. Thank you for that. Because I'm sure that they do still wonder sometimes.

SLEZAK: Yes. Well, that's what we had, just used what we had. Kind of expensive. At that time they just threw buckets of money at you and said, "Just get the job done."

WRIGHT: I wonder though if the quality of those materials have helped keep some of that quality of your work for all these 40-something years.

SLEZAK: Probably. The other big step I guess so far as the photography end of things went was sometime later—and I don't really remember when—but as best as I remember, we had moved into our permanent facility at Clear Lake [suburb of Houston, Texas]. We as the Photo Division had transferred over finally to thin base film. Kodak coated this Mylar thin base film for us. It was slit into 16-millimeter and 70-millimeter sizes. I don't remember for sure, and I don't think John Brinkmann did either, but I believe I had heard that we had to buy the whole coating. I remember we had lots of film in a freezer. This keeps the film from deteriorating. So we used this film for a long time. Then later on [from] Kodak—we would buy whole big batches of nine-inch aerial film when I was in the aerial photo section.

WRIGHT: Was this bulk, and then you rolled your own for what you needed in your cameras? Or did it come already ready to load in the cameras that you had?

SLEZAK: It came in bulk and in spools for different formats. This was in an effort to get more picture material without the weight. But the problem—when we got into the thin base film, we had a 16-millimeter motion picture processor to develop the 16-millimeter film, but we had to find a way to develop long rolls of 70-millimeter film. This thin base film has very little body. If you can imagine trying to handle something that's about as thin as a roll of toilet paper.

At the time, the way that you processed 70-millimeter film—if it were standard base, we had big Nikkor stainless steel reels. They had these concentric circle things, and you had to be

an expert to load these things to begin with. But for the thin base, it was almost impossible to even load the stuff on the reels because it has no thickness to it at all. Then the problem is if you put the stuff in chemicals and barely agitate it, the film would come off the reels. We tried doing this with just test film. Didn't work out too well.

Then I had remembered from quite a few years back that Kodak used to make a film processing belt, I think they called it. What it was was a strip of 120-size plastic. It had little dimples on the edges. What you did is you wound your film up inside this film belt. When they sold it, it only came long enough to process a roll of 120 film. So we contacted Kodak to see if they still had some of this stuff. They didn't make it anymore, but they found some. So we got some in big long rolls. Then we had special stainless steel tanks made up that would house the film there for developing. That's what we used initially to develop the long rolls of 70-millimeter film. I think that I processed most of it for a good long while. Without the film belt, I don't know what we would have done with it really.

Harking back to John Glenn's film that he shot on his orbital flight—after that initial foray into space photography, we then started shooting a gray card and a color chart on the head end of the flight films, so that when they came back, if they had been irradiated or got into too much heat—it used to get very hot on reentry, and there always has been radiation problems—that we could correct the color balance and density.

WRIGHT: Were there a lot of issues that you had to correct due to the heat or radiation?

SLEZAK: No, actually. They housed this stuff in a particular place. I don't think there was anything lead-lined, but there was a certain amount of metal and so forth. I think that's what

protected it. We did find of course some base fog, especially on the really fast films that we started using for things. The faster the film, the easier it fogs.

JOHNSON: I had one question. I was just thinking about that 8 x 10 Deardorff camera. Who decided to order that? How did you end up with that camera?

SLEZAK: We ended up with about six of them. [I think they were ordered by Jack Ottinger, who became the head of the Still Photo Section.]

JOHNSON: At the beginning, why was that camera chosen?

SLEZAK: One of them we set up and used for a copy camera. I think the idea was to use it for a portrait camera, because we were getting into shooting portraits of the astronauts for PAO [Public Affairs Office]. The rest of them, I guess, were just used for regular work or something. But they were large.

JOHNSON: It just seemed like an interesting choice at that time to purchase those cameras.

SLEZAK: If I could afford the film for it, I wouldn't mind having one.

WRIGHT: Then what did you move into next? Was there a next range of cameras that you started?

SLEZAK: We had some 4 x 5 [inch] Speed Graphics, which the news people were still using. It was getting old. We used to go shoot stuff with those. But they're slow to use, as compared with a 35-[millimeter] or a Hasselblad or something. Then we moved to using Hasselblads for most things. But still we did an awful lot of nuts and bolts photography for engineers and so forth.

We also had 4 x 5 [inch] view cameras. The nice thing about a view camera is you can bend the bellows around and the front lens board to correct for any number of things. If you shoot a picture of something, just a square object or a computer or something, it's going to be big in the front and narrow toward the back. This you can correct for parallax with a view camera. So we used those a lot. They're slow. We would go out on a job and take a view camera and a whole bunch of lights and light stands, and we had big dollies to carry all this stuff. It was pretty slow, and dull and unrewarding!

WRIGHT: I think sometimes people see NASA photographers as always being the glitz and the glamour. But if you look in the image repository, you'd see suit development, construction, pictures of the chambers. When I've seen those I can imagine some of those were challenging because of the tight spaces that you had while they were doing testing. Do you have any memories of any of those that were more challenging than others, with some of those onsite photos that you had to do?

SLEZAK: At one time or another I guess I probably worked in every area that there was around NASA. I used to shoot stuff down at the arc jet and down at thermochemical. This was a job down at thermochemical [photo numbers [TS-1](#) and [TS-2](#)]. This was a job for the suit people.

WRIGHT: Looks like suits.

SLEZAK: Then this picture [photo number [TS-3](#)], they told me that if I stuck with NASA I would end up in high places.

WRIGHT: There you were. You're up on a big boom.

SLEZAK: Yes. That was in Building 9, I think.

When we first started in the aerial photo section, we had a whole lot older planes than what we have now. We didn't have the T-38s [Talon airplane].

This is a picture of the Photographic Division [photo number [S76-30674](#)], probably when we were about as large as we ever had gotten. These were all just the civil service people. That's me there. I was looking through here the other day, and I thought, —~~o~~ my goodness, this person is dead, and that person is dead." A whole lot of them.

WRIGHT: What a crew. So who took the picture, if this is the Division?

SLEZAK: We might have done it remotely. In fact come to think of it, I think we did. We did it remotely, yes.

WRIGHT: Did you work on mission photography during the Gemini days as well, or was most of what you started doing for missions during the early Apollo flights?

SLEZAK: Well, yes, during Mercury, Gemini mostly I was working in the lab one place or another.

WRIGHT: Hours get any better as you got closer to the Moon?

SLEZAK: No.

WRIGHT: Just continual?

SLEZAK: Yes. There was just a huge push to get a man on the Moon. Everybody just worked all the time. It wasn't until after Apollo and the Apollo-Soyuz that there was a big lull for a long time, until they got the [Space] Shuttle up and running. We used to be able to requisition almost anything or go right down to supply and say, "I need a such-and-such right now," and you could get it. Well, after Apollo-Soyuz and we got into this big long lull, the people that generated paperwork seem to have gotten ahold of the reins. You couldn't get anything without paperwork. Then you had to wait and wait and wait until it got delivered. Even if you went down there to pick something up, you still had to have paperwork that they had to process, and then you had to wait and wait.

WRIGHT: That's quite a cultural change.

SLEZAK: It was. Things really slowed down very rapidly. I remember many years later after that—talk about slowing down—we went home one Friday and came in on Monday, and they had taken the secretaries' typewriters away. Everybody had a computer on their desk. They didn't even tell us how to turn the thing on. They sent all the secretaries to school to learn how to do [Microsoft] Word and all these other good things on the computer.

I was fortunate. At the time I was the monitor for the digital film recording laboratory. I'm getting way ahead of myself here, but there was a guy in the office there named Sid Clinton who had had a computer company on the outside before he came to work at NASA. I used to try to do my weekly activity reports on the computer. Every once in a while they used to laugh about it. I said, "Sid, Sid, come here, I know it's in there somewhere." He'd come and go [knocks] and there it was.

WRIGHT: He'd find it for you.

SLEZAK: Yes. It took me a while to get to be computer-savvy. Now I'm pretty good on a computer. I make opera CD covers on the computer.

WRIGHT: That was quite a technological change across the Center.

SLEZAK: Yes, it sure was. The other thing, while we're on the computer thing, not bragging at all, but I was absolutely the best photo retoucher in the Photo Division. But the way I learned this in school was the old fashioned manual way.

WRIGHT: One dab at a time.

SLEZAK: One dot at a time. Retouching color photos is a whole lot more difficult than black-and-white, because you have the density and you have the color to deal with too. Now I do all kinds of photo restoration on the computer, and it is just wonderful.

WRIGHT: A little less intense maybe.

SLEZAK: Yes. I've done a whole lot of genealogy stuff. So I've gotten these old, old, old pictures. Some of them have been torn in pieces. I've put them back together and fixed them all. You would never know that anything was ever wrong with them. That was just a really major step forward!

WRIGHT: It would have been quite different in the mid '60s to have had that type of technology. You talked about the thin base film, and that was a big change when that came through. Were there other major changes of that type of technology during the same time that you were trying to keep up with all that there was to do during the first days of the space race? We always laugh that every time we get good on our computer software now they change it, so you're always in a learning curve. Did you experience a lot of the technological learning curves back then, or did that stay pretty standard?

SLEZAK: A lot of the things were fairly standard, but some of the processes changed. The films changed. Of course, the different applications required different kinds of films. We used

multispectral banks of cameras that shot regular color, infrared color, infrared black-and-white, and all this kind of thing. We also changed the processing machines.

When Kodak came out with—I think it was called an RT 12 Versamat—we used that then to process these long rolls of black and white 70-millimeter film so we weren't doing it by hand anymore. I think the first time we ever did that, everybody was sitting there chewing on their fingernails because this was a roller transport, big old boxy machine. It had a bad history of jams. We found out if we took a big sheet of 8 x 10 film and taped the head end to the roll of film and fed that through, that big hunk of 8 x 10 film would grab on the rollers, and it would usually make it through the machine.

The other problem was the 70-millimeter film would squirm back and forth; snake through the machine. We were worried about, —s this going to cause scratches and abrasions?" So before we would run flight film, the machine was taken all apart and cleaned, because the chemicals have a way of crystallizing. We used that for a good long while.

Then they came out with a better Versamat. It wasn't a whole lot better, but some. We got one of those. But in the meantime, we had gotten another big motion picture processing machine. These machines were designed by the Photo Division specifically for our requirements. The new one we got would process 16-millimeter film, and then over on the side it would process 70-millimeter film also on big rollers. Then sometime much later again we upgraded to another 16-millimeter motion picture processor. Like one of the guys said, even Kodak wasn't doing this, and I'm sure they could if they had wanted to, but we were the only place in the world that could process and develop soundtrack on motion picture film at 1000 feet per minute.

Soundtrack developer is something that is put on the very edge of the film. But you can't let it bleed over into the picture area because it would just obliterate everything. We used to do this at 1000 feet per minute, if I remember correctly. It was pretty fast.

WRIGHT: Did you always have a backlog, or were you able to keep up on the processing? What kind of turnaround time did they expect by the time that they shot that film? How soon did they want to be able to look at it?

SLEZAK: Right now.

WRIGHT: That was your deadline? Right now?

SLEZAK: Yes. If it was some kind of a test going on, some kind of an important test that was really time-critical, we would put that on first and run it. Then if it was something else that maybe wasn't as time-critical, that would go on later. Sometimes a lot of it was just duplication. Making dupes of other PAO films or who knows what.

WRIGHT: I'm curious about your dealings with the astronauts. Did you train them at all, or did you work with them after they got back with the flight film?

SLEZAK: Yes, way back we used to do some training with the astronauts. Then that was taken over by some group. I think these were contractors, they had something to do with the Astronaut Office. I'm not sure what directorate they were in. We knew these people and used to interface

with them. They did the training. Of course, we would bring up pointers also, and things that we found out from pictures that had already been done, and say, “Well, if you can do this instead of that,” or, “Don’t do this anymore.”

Then, after the mission pictures had been processed, we interfaced with the astronauts a lot. They would pick out certain pictures from their missions that they thought were the most salient features of the mission. We would put together press packages and motion picture. They would have a motion picture of the whole mission. I guess they still do that.

WRIGHT: Did you have to catalog? Did you have to put the captions on the photos as well? Was that part of your duties?

SLEZAK: No, PAO did that. They printed all the stuff on the back of the pictures with those old mimeograph machines. They were blurry.

WRIGHT: Tell us about those days in preparation for the first Moon landing, of what that you did in the lab. Was there anything different you did preparing for the flight films to come back?

SLEZAK: Yes, I did. Now do you want to take this chronologically?

WRIGHT: Yes, let’s do that.

SLEZAK: This is the stuff from Apollo 11 [referring to photos]. Let me tell you a little bit about this, and I can show you a few pictures that maybe explain things a little bit better.

Getting down to the Apollo program. I think this is something that I had mentioned before when we met. I said, –Good. I’d like to get some things straightened out, because everything they have written in these books about my involvement in the Apollo program is wrong or really messed up. So this is the straight story. Don’t believe anybody else, believe me, because I was there!”

To begin with, I was the photographer assigned in the crew reception area [CRA] of the Lunar Receiving Laboratory [LRL] for the Apollo landing missions. My duties in there were to shoot engineering, medical, PAO, motion picture and stills, I ran the TV camera from in there, and also as an ex-Army medic I did the daily vital signs, blood pressure, temps, pulse, and all that kind of stuff. I, as all the rest of us in there, had been in quarantine for a week before the astronauts came back. The reason the quarantines were 21 days is if anybody came down with a cold or something, they could pull them out and replace them with somebody in the crew reception area, except me, because I didn’t have any backup person.

My primary duties, in addition to all the regular stuff, was to download and sterilize the mission films. Later, when the spacecraft came into the spacecraft bay in the Lunar Receiving Lab, I was on the team to decontaminate the spacecraft. We had to download everything and annotate each item from the Apollo 11 spacecraft. I had to go to school under North American [Rockwell Corporation] to learn how to use all the ground support equipment. The fluids in the spacecraft were very, very toxic, even to the touch. So all of these systems had to be flushed and reflashed and so forth. The ground support equipment that North American had built to do this was about six foot tall and about seven feet long. It looked like a plumber’s nightmare. It had more plumbing and this and that and the other thing. It was unbelievable, with all kinds of

valves. Then we had to hook this into the spacecraft, and we had to find out what switches in the spacecraft that you had to throw to open which ducts and so forth.

This was something that was foisted on me at the last minute. I was telling them, “I have enough stuff to do already.” They finally said, “That’s okay, you can do that too.” So after we downloaded all the stuff—and there was old nasty stuff in there, believe me. It was old washcloths where they shaved, and it was all full of old hair and this and that, just all kinds of weird debris in there. And all this stuff had to be annotated by a guy named Mr. Hamilton [Dale Hamilton – ILC Industries] on the outside. Really nice man to work with. After all this was done and the systems were flushed, we burned formaldehyde inside of the spacecraft and secured the door, and they figured that this would take care of any bugs that might be there.

Before the Apollo 11 mission, Fred Southard and I worked in the Photo Science Office. We started a good time beforehand, and finally worked out this procedure. Before the Apollo 11 actual landing, I had to make a big presentation to the management as to what we were going to do, and we had a big question and answer period. Everything finally worked out okay.

The procedure was to use ethylene oxide gas in an autoclave which was pumped down to -20 inches of mercury. The initial problem was to find something that we could interleave the film with so that this gas could pass around through the film. We tried a bunch of different things, including some kind of nylon material and it left fuzz on the film. That didn’t work. Finally we ended up using—we should have thought of this earlier—the same paper that Kodak used for packaging their 120 film. It worked really well, and it would allow the gas to pass around through the film all right.

I had some special canisters made by Tech Services. These were light-baffled canisters, and they had only a small opening in the top about the size of a silver dollar. It would allow the

gas to go in, but no light could go through there. Fred Southard primarily designed the interleaving device, and we worked the bugs out. This was a part of the interleaving device that we used to interleave the film, the 16-millimeter and 70-millimeter [photo number [S69-25155](#)]. Then the film was put into these light-baffled canisters to go into the autoclave.

I had another canister which was made up with control rolls. In the control rolls, I introduced spore strips of *Bacillus globigii* [bacteria] and interleaved this with the film so that after the 16-hour “soak” in the ethylene oxide gas, the people on the outside could open the autoclave from the outside, take the film out, and it would go into bonded storage at the LRL. The film was held there for 24 hours while I took my control rolls out and did my own microbiology in there. I’d take my spore strips out and put them in petri dishes with algae in an incubator and try to get them to grow something. If I didn’t get anything growing in an incubator in 24 hours, we figured we had a good kill.

Then I would call over to the Photo Division, and someone from the Photo Division would come over with armed guards. They would take the flight film over to PTL [Photographic Technology Laboratory] to be processed finally. I don’t know how many sims [simulations] that I had gone through over a period of a year, probably 12, 15. And everything worked just wonderfully. Until the day before the flight film came in.

There’s some kind of a story, and I think the source that they credited was Dick [Richard W.] Underwood. He said that Fred Southard came over and put some film into the autoclave from the outside. This was completely wrong, because nothing went in the autoclave from the outside. It only emanated from me on the inside, because if we ran a sim and I didn’t have my control rolls in there with the spore strips, then the sim didn’t really mean anything.

So the last sim—well, I thought it was going to be the last sim that I was going to do—we went through the usual procedures. The film went over to the Photo Division, and after awhile I got a call from Dick Underwood. He says, “Terry, what did you do to the film?” I said, “I didn’t do anything to it. It’s just the usual, like we did everything before. What’s the matter?” He said, “It’s all melted and stuck to the bottom of the canister.” I was floored!

What had happened was the ethylene oxide gas somehow had condensed at the top of the autoclave and dripped into the hole in the light-baffled canister, which is only about the size of a silver dollar. It had somehow gotten on the film, and it melted it. We were already in quarantine, of course. So they screened off the back part of the LRL, and they had some plumbers come in, and they re-plumbed the autoclave, and they put some kind of a shield up at the top. After they finished, I had to run another sim, of course. So we did that, and everything came out fine. The flight film was on its way by this time.

So that’s how close we came to losing the flight film. When the flight film came, we, in quarantine, were looking out the back door of the LRL. They came with these big gray boxes. The rock boxes and the film boxes all looked the same. Everybody and his brother had to have pictures taken of them holding the rock box, even if they had nothing to do with it. And we were all in the LRL waiting to get started on all these things that we had to work on.

We finally got the film in, and this was pretty late in the day. Finally I started unpacking the film, which was double-bagged in plastic containers. Inside of there were the Beta Cloth containers that the film magazines were in, like an ammunition belt. We inventoried these through the window of the biological barrier. On the magazines we had heat sensors and film usage indicators, so all these had to be annotated by people on the outside. It would show if we had gotten excess radiation or heat to any of the magazines so that we could adjust the

processing accordingly if something were amiss. Then the frame counters would tell us how much film was exposed. If they, let's say, processed a big roll of 16-millimeter film, and it comes out of the machine and there's half of it [with] nothing on it, they wouldn't say, "Oh, my goodness," they'd say, "Oh, well, they only shot half of that roll."

This we were doing through the biological barrier. And when I came to Magazine S, I opened the Beta Cloth belt, and in there was a note from Buzz Aldrin. He said, "This is the magazine that Neil [A. Armstrong] had dropped on the surface, but this was the most important magazine." When I pulled it out it was all covered in this black material—looked like lampblack almost—it was really dark black with little bright speckly things, which turned out to be little bits of glass from the lunar surface. So everybody said, "What is that?" I said, "It's Moon dust. That's the only place it's been." So they had to shoot a picture of me with the Moon dust on my hand. Then according to protocol, the other people in the room had to leave and I had to strip off my clothing and clean off all of the work surfaces with Clorox bleach, then go to the showers.

I didn't really think too much about it at the time. The only thing I was concerned with was this dust, which is so abrasive, it's like carborundum [silicon carbide (SiC)], and I was thinking, "If this stuff has gotten into the magazine, the film is going to be all scratched." So that's really what I was worried about. Later I was interviewed by the geologists from the LRL, as they had not opened any rock boxes yet and I described the dust to them as being like carborundum or mica schist.

I had been up for many many hours because of the glitch with the autoclave and the contact with the Moon dust. By the time I actually got to go and download and interleave the film, I had probably been up for a good 24 hours or more. I was really tired. So the next

morning, I found my picture on the front page of the newspaper [photo numbers [S69-40054](#) and [S69-40055](#)]. That's how I became the first man in the world to touch the Moon dust!

I had a bunch of proof sheets like this [photo numbers [S69-45480](#), [S69-45481](#), [S69-45482](#), [S69-45483](#), [S69-45484](#), [S69-45485](#), [S69-45486](#), [S69-45487](#)]. That's me inside of the Mobile Quarantine Facility [MQF] [photo number [S69-45481](#)]. These are pictures that I shot in the LRL after the mission film came back. I noticed on the News *Roundup* [July 2009] they used one of my pictures similar to one of these on their blurb that they had for the 40th anniversary issue [photo number [S69-40306](#)].

This was an interesting thing. We were wondering how to get pictures out that I shot inside. I was shooting 4 x 5 Polaroid pictures, and I'd paste them up on the glass of the biological barrier, and we just set up a 4 x 5 view camera on the outside, so any time I had some pictures, I'd put them up, and a guy would come over from the Photo Division and copy the things through the glass. That's what they were turning out to the PAO.

This is a picture of the guys, the Apollo 11 crew at chow time [photo number [S69-42020](#)]. Then, as it turned out, Neil Armstrong had his birthday in quarantine. So there's some pictures of Neil cutting his birthday cake [photo numbers [S69-40953](#) and [S69-40958](#)]. This was a picture right before we were getting out of quarantine [photo number [S69-42022](#)]. This is Dr. Bill [William R.] Carpentier, who I still stay in touch with, and this is Dr. Craig [L.] Fischer, who I've kept in touch with also. Here's the Apollo 11 crew.

Now if you're wondering what this girl is doing in there, this is a girl from the rock lab. In the last two, three days of the quarantine, she poked a hole in a glove in the rock lab, so they put her in quarantine. The thing is, she had told a couple people beforehand that she was going to get into quarantine with us. We had to change the sleeping arrangements, and one of the guys

lost his bedroom. The rest of us slept in kind of a dormitory. She later got as much mileage as possible from this, and she was on local and national television.

Jack [J.] Valenti, who was head of Motion Picture Arts and Sciences in California, sent me a whole bunch of first run movies. We had a 16-millimeter sound projector in the crew reception area, so when the big workload finally diminished and we could have a little breather at least in the evening—because even the astronauts were tied up from early till late in the conference area getting debriefed and trying to relate everything while it was still fresh in their minds, and of course everybody from every discipline out there wanted to talk to them. So in the evenings everybody was really pretty tired. I was the projectionist also; I wore a lot of hats. We would show some movies then, which was nice.

WRIGHT: That was nice. A little recreation.

SLEZAK: Yes.

[The following discussion also refers to photo numbers [S69-62291](#), [S69-60424](#), [S69-60426](#), [S69-62292](#)] These are just some pictures from Pete [Charles P.] Conrad and “Flash” Gordon—Dick [Richard F.] Gordon.

WRIGHT: Now this is the Apollo 12 crew. Did you take on the same role during that mission as well?

SLEZAK: I was there for Apollo 11, Apollo 12, and Apollo 13, for which we still went into quarantine, and then they cut it short because they didn’t land on the Moon. Apollo 14 was our

last one with Al [Alan B.] Shepard. This is Pete Conrad and Dick Gordon playing with some of the Moon rocks [photo number [S69-62293](#)]. Right before we got out of quarantine, I would shoot a picture [photo number [S69-63056](#)]. I'm never in any of the pictures because I'm the one who shoots it. That's what my wife was saying. She says, "Well, where are you?" I said, "I'm not in there. I'm the guy they call in the newspaper *NASA Photo!*"

WRIGHT: Behind the camera.

SLEZAK: Yes. So anyway here's Al [Alan] Bean and all the crew [photo number [S69-63056](#)]. This is Dr. Clarence [A.] Jernigan. I'm in touch with him too.

WRIGHT: That's quite a crew.

SLEZAK: Yes. Everybody was busier than a one-armed paperhanger. You had asked me about what was it like in the quarantine facility. It was interesting. Maybe you didn't think this was a really interesting question, but a psychiatrist would have had a field day. The people in the CRA—we became very clannish. The reason being, I guess most of our irritants all came from the outside. And there were many. Everybody wanted a piece of the action. People at first used to come—like people in the Photo Division, and some of the other places where they were working nightshifts; they were working around the clock. So they would change shifts, and I'd have people calling me in the middle of the night. I'd get up, go answer the phone, and somebody'd say, "Hey, what's going on over there?" "I was trying to sleep. It's 3:00 in the morning." "Oh!" (You get the picture!)

So finally I told the secretary out there, “If I have any calls, if it’s something important and somebody really has some question about something, you can call me. But if it’s not, just paste a note up on the glass and I’ll get to them as soon as I can.” That was the best I could do. Especially in the early stages, everybody was calling in there. It was a madhouse.

I think the astronauts even were irritated with all of the attention. I know Neil doesn’t like a lot of attention. Everybody was tired and probably tired of being incarcerated, but like I say, it got very clannish. We all got along great together in there, but we didn’t get along too well with some of the people on the outside.

WRIGHT: [What did you do after you left your duties in the Lunar Receiving Lab?]

SLEZAK: I used to do so many things that were all mixed together, it’s hard for me to even figure out what is chronological here.

WRIGHT: I know a lot of it, I’m sure, was parallel.

SLEZAK: Well, I guess maybe this is the next thing chronologically. After I left working in the lab and the LRL, I went to the aerial photo section. We had a big Earth Resources Program using several aircraft. We had a P3V [P-3 Orion airplane], which was a converted Navy plane, and then we had a C-130 [Hercules airplane], a big old cargo plane [photo number [S71-31799](#)]. We had these all outfitted with remote sensing apparatus and big 9-inch metric cameras and multispectral 70-millimeter cameras.

We also had a WB57-F [Canberra], which had the same type of camera array and was used for high altitude imaging. We serviced the camera palette, but did not fly in this two-seater aircraft [photo number [S73-36694](#)]. I spent two weeks in Alaska servicing the B57, which was very interesting.

We used to go and fly missions for the Forestry Service [U.S. Forest Service], the USGS [U.S. Geological Survey], the Department of Agriculture, and different government entities. We even went and spent a month in Iceland. Pete [Clarence P.] Stanley and I mapped the whole country of Iceland for the Icelandic government. USGS I think also got copies. They were just amazed. They said they had never seen such quality, because there in Iceland you have snow and right next to it is black igneous rock. You have to keep riding the gain on the exposure all the time. Then you would have someplace where there's grasslands, and then you have also seashore, and you have water. It covered everything.

WRIGHT: What a nice challenge for a photographer.

SLEZAK: It was. It was a really interesting trip. There's nothing quite like Iceland. I've spent a lot of time in Europe. It's kind of a European country, but then again it isn't. They have preserved the language. They still speak Viking. They said a Viking could walk ashore today and understand everybody and be understood. They even have a special government commission there to maintain the purity of the language. So when they need a word for something, they take old words and they combine them, like in German, and come up with a new word. It was really very interesting.

These are 9-inch metric cameras [photo number [S73-35615](#)]. They were made in Switzerland. “They’re made like a Swiss watch.” These are the 70-millimeter Hasselblad cameras behind the 9-inch cameras. These were our multispectral cameras, which was a bank of six cameras that shot infrared color, infrared black-and-white, regular color, regular black-and-white, different things, whatever they required. We had these huge magazines made to go on the Hasselblad camera. See, this is a standard one right here that Pete Stanley is holding. We could shoot an awful lot of 70-millimeter film. These were all controlled remotely from these big consoles [photo number [C72-797](#)].

We used to shoot air-to-air and air-to-ground things from the T-38s. We would do the Shuttle chase landings, and we would practice these things out at White Sands Missile Test Range [New Mexico]. The reason we had to practice with the T-38 was if they didn’t time this exactly down to the second when the Shuttle landed, we would never catch the thing, because it flies like a brick. Even a T-38 can’t even catch up with the Shuttle. It’s going that fast.

We would go out there, and do these four-G [gravity] turns, and do a couple runs in the morning and eat lunch and do a couple runs in the afternoon. [We were getting up early in the morning to fly out to White Sands to begin with.] We’d refuel and then we would fly back to Ellington in the evening. By the time you had done that for a day, you were about used up. During the 4- and 4 ½-G turns, you sit there and just grunt trying to keep your blood still up in your head. Your body gets scrunched terribly. I used to tell people, “I used to be about six-foot-five, but I’ve gotten shrunken down from pulling all these Gs!”

WRIGHT: What a range of aircraft you were in, from the older aircraft and the remote sensing ventures to the T-38s for the Shuttle.

SLEZAK: Yes. We also flew jobs in helicopters, too. I remember one time I almost crashed with Conway [H.] Roberts, one of our NASA pilots. I'm not sure what this was for anymore, I can't remember, but they dropped big dye markers in Galveston Bay [Texas]. They wanted to see where this dye went off to. So every hour or so, we would go with the helicopter and fly over these things and shoot pictures from the air to show where the dye was dispersing. I was flying with Jere [B.] Cobb in the morning, who was just an ace. I used to fly with Jere Cobb quite a bit, one of our NASA pilots. He was so good in a T-38 or anything, I mean he was just a fantastic pilot. Went with Conway Roberts in the afternoon.

So we're going along, "Robby," I said, "Can you lean it over a little bit more? I can't see anything." So he whips this thing up clear on its side, and we fell like a rock. We almost went into the drink. In fact, it was so close, you have this natural reflex, I picked my feet up like they were going to get wet. We bottomed out like this [demonstrates], inches above the water. Robby is sitting there just shaking, and he just sat there for a while. I says, "Well, are we going to get on with it?" So back up we went.

WRIGHT: That was a memorable experience, wasn't it?

SLEZAK: Yes, I remember that one really well. This is our aerial photo section [photo number [TS-4](#)]. I think there were only three or four of us that actually flew in the T-38s. Stanley, me, Bobby [V.] Gray. I think Carmelo [Sustaita] flew occasionally. The other guys flew in the Earth Resources planes, and two were camera repairmen. We had to go through the water egress

training the same as the astronauts because we were on regular flight crews.

WRIGHT: So you learned how to parachute?

SLEZAK: Not exactly! Strangely enough, instead of taking you up and pushing you out of an airplane, it's cheaper to tow you up on a parasail. The Navy would do this down in Biscayne Bay, in Florida. They would take you up on a parasail to a high altitude, and you had these pelican hooks, and they would give you a wave-off flag when to release your pelican hooks. You go sloshing into Biscayne Bay.

You have to learn how to get rid of your parachute before it drags you down. Then in your seat pack, there is a one-man little rubber raft. This thing is supposed to have a canopy on it to protect you from the elements. It's also supposed to have a CO² cylinder in there to automatically inflate it. Well, they take the cylinder out, and they cut the canopy off. So now you're in the water, and you have to blow it up orally. By the time you get the thing blown up, you're just about ready to pass out. Then you crawl in your little life raft.

This was the strangest thing. On the day that we were supposed to go do this, it was almost black outside during the daytime. There was this huge storm coming. So we thought, —Well, they're probably just going to cancel this thing.” Not the Navy. So we went out there and went into Biscayne Bay. Once you got down in the water, they dropped you so far apart you didn't see anybody. It's like you were out in the middle of the ocean all by yourself. It started raining. It was cold. This was in August. Can you imagine? It was cold, and the wind was blowing. You're all soaking wet, and it was raining so hard you were trying to bail the water out

of your life raft, to no avail. Of course the canopy had been cut off. So then it started sleeting. There was big, dime-size sleet that was coming down. It really would sting. So I had the plastic bottom of my seat pack, and I was holding this thing up over my head trying to ward off the sleet. You're sitting in this raft with water up to your waist because you're sinking, watching all the sleet build up in your life raft. The wind is howling, the waves are blowing, and everybody was freezing to death.

They told us beforehand, "We'll be around to pick you up in about 10 minutes." Well, it depended upon when they dropped you in there. A bunch of us were out there for probably an hour, to an hour and a half. When they finally came and picked us up, they put us out on the deck of a PT [patrol torpedo] boat with no cover and took us in at about 10,000 miles an hour back to shore. The wind was blowing even harder then, and by the time we got back, we had actually turned blue. We were about the same color as our flight suits. The first thing we did was go hit the shower, and we turned the hot water on and just stood there trying to thaw out.

If I told somebody that I almost froze to death in Biscayne Bay in Florida in August, they'd never believe me. It was the weirdest thing, it was really strange. Other than that, it was fun.

Here I am getting ready to go to White Sands [photo number [TS-5](#)], and this is just a picture of playing around there with the T-38s [photo number [S84-27585](#)].

WRIGHT: That's beautiful. I take it this wasn't shot in Houston.

SLEZAK: That was probably out at White Sands or at [NASA Dryden Flight Research Center] Edwards [Air Force Base, California]. I don't remember which.

WRIGHT: It's neat. I know the planes look a lot closer than they are.

SLEZAK: Well, they were pretty close. I used to fly with Vance [D.] Brand a lot [photo number [S83-25846](#)], and nobody wanted to fly with Vance. We would take off, and he would have the wing of his T-38 almost sticking into the fuselage of the lead plane. If we ever had a big gust of wind, it would have been blammo! I kept telling some of the other photographers about this. —Oh, it can't be that bad.”

Well, Pete Stanley went and flew with Vance Brand one time, and he came back and he said, —Man, that guy must have a death wish or something. I had my rearview mirror, and I was watching back there. I was wondering how long it was going to be before we hit the other plane.” I said, —I told you.” As it turned out, nobody wanted to fly with Vance. The other astronauts, when we would go out to Edwards or something, they used to actually lie to him. They would leave before Vance would. We were out at Edwards one time, and he was asking some of the guys, —You heading back to Houston?” —No, no, no, we're going to stay here overnight.” I was the only guy, it turned out, that would fly with Vance. Vance and I got to be pretty good friends.

Vance had gotten divorced. He married this gal who was an engineer at NASA, [Beverly Ann Whitnel]. They had a little boy sometime later. Vance and I were flying to Edwards one time. He was doing the same thing with the wing stuck in the fuselage of the other plane. I kept looking, and I thought, —Oh jeez, we're not going to do this all the way to Edwards, are we?” So I waited for quite a while to see if he would break off, but he didn't. So finally I said, —Vance, How's the new bambino?” He said, —Oh, man, he's doing great, he's just doing fine, he's

growing like a weed.” I said, “You want him to be a damned orphan?” He said, “Oh, does this bother you?” “No.” He says, “Would you like me to move over a little?” “Yes, that’d be good.” So he moved over about two inches. That was it. We flew all the way to Edwards like that.

WRIGHT: Up close and personal.

SLEZAK: Yes, up close and personal. He says, “Well, I need to get in some close formation practice,” or something like that. Then we came back from that trip, and I was over in Building 8 going down the stairs one day. His wife Beverly was coming up the stairs. She saw me, she started laughing already. She says, “Vance told me about what you said.”

WRIGHT: So do you have another series of photos? Let’s see what else you got over there.

SLEZAK: We’re going to whiz through all this stuff here I hope. Let’s see.

WRIGHT: How many years were you with NASA?

SLEZAK: When I retired I had 34½ years, and three years of that was military time. So 31½.

WRIGHT: You went in ’62 I think. Is that correct?

SLEZAK: I don’t remember if it was ’61 or ’62. Somewhere around there. I think this picture is out at White Sands [photo number [S82-29273](#)]. We were at Edwards expecting the Shuttle

landing, of which flight I don't remember. I got to be in charge of the photo effort at White Sands. As it turned out, the weather was so bad that they decided to go in and land at White Sands. There are some pictures from White Sands.

WRIGHT: Anna [L.] Fisher [M.D.]

SLEZAK: There's a picture with Anna Fisher [photo number [TS-6](#)]. I got an award for the photographic effort at White Sands. As it turned out, not only was it the first landing, it was the only landing at White Sands.

WRIGHT: So it surely was a unique experience, because that was it, wasn't it?

SLEZAK: Yes. I have so many of these awards. I could probably paper a room with them. I pulled out a couple that actually meant something. This was the idea that I came up with of using this old Kodak blanket for processing thin base film. That was a special award that they gave me for that.

My other big big job was as a permanent party on the zero-gravity plane [KC-135] for 18½ years and had a lot of really fun experiences on there. I think I was on the zero-g plane every time we had a fire or a rapid decompression or an explosion.

WRIGHT: Any kind of event.

SLEZAK: Oh yes. It got to be just, —Eh.” It was funny. The plane, at one time, was sent in for IRAN, this is not the country Iran, this is —inspect, repair as needed.” They tear the plane all apart, take all the insulation out, check all the wiring. There were a lot of cracks in the wings and the fuselage and so forth like that. It came back from IRAN one time—and we didn’t know this for a while—but we would go out and we would fly our 40 parabolas every day, and then when we came in and landed the pressure would go out from the plane. The doors on either side used to just fall in, go ka-plunk, ka-plunk while you’re zipping down the runway. Disconcerting! You think, —Ge, that’s not very good if the door falls in while we’re up there at 36,000 feet.” It took us a while to figure out they switched the doors. So we finally put the doors on the correct side where they belonged.

It was funny. We had a famous newsman, Morton Dean, that was with us [photo S81-34478], and there was a guy that was on television out in California, a newscaster. We were sitting there for the landing, and I told them, —Now, don’t be upset or anything when we land. Usually the doors fall in.” They said, —You’re kidding.” —No, man, I’m not kidding.” So we landed, and the doors went ka-plop, ka-plop. He said, —Man, you weren’t kidding.” —No, I told you I wasn’t kidding.” But we finally figured out what the problem was with the doors.

These are random things here. There’s my friend Kathy [Kathryn D.] Sullivan [photo number [TS-7](#)]. Here’s astronaut Dale [A.] Gardner and I [photo number [TS-8](#)].

WRIGHT: Well, the ’70s brought you a little bit of something different. You had female astronauts to work with for the first time.

SLEZAK: Yes. Got to be pretty good friends with [Margaret] Rhea Seddon and some of the girls. I became really close with the European astronauts. There's Ulf Merbold, and Ernst Messerschmid, and Wubbo [J.] Ockels, who's from the Netherlands, and Reinhard Furrer [photo number [S84-47139](#)]. Since I speak German, I used to interface with them quite a bit. This was a gal, Stephe Wells [photo number [S87-31871](#)], who was Bob [Robert J.] Williams's assistant in the Zero-G Office for a while. She was in the National Guard and was a C-5A pilot [Galaxy airplane], the biggest airplane that we have.

WRIGHT: She's a little bitty thing for a big airplane.

SLEZAK: She's about five-foot-four, maybe. Over the years, we had every imaginable kind of experiment. Things that you would never even dream of. People would come up with some of the craziest experiments.

WRIGHT: Is this a video camera [photo number [S86-36599](#)]? Did you go to video?

SLEZAK: Yes, that's a video camera.

WRIGHT: So you kept moving from one medium to another.

SLEZAK: Yes I did everything, stills, motion picture, video.

WRIGHT: Did you train yourself, or did you have some type of training when the new equipment came in?

SLEZAK: No, I just read the book.

WRIGHT: Just experimented and figured out how to make it work?

SLEZAK: Yes. This is just horsing around [photo number [S84-43036](#)].

WRIGHT: That's fun.

SLEZAK: This was, I think if I remember correctly, a sled that they used on the ESA experiments, the European Space Agency [photo number [S89-37526](#) and [S89-37528](#)].

WRIGHT: Did you find yourself being an experiment as well? Did they test things on you, since you'd gone so many times?

SLEZAK: Yes. In fact the people from the Navy had a big ongoing vestibular study. They used to bring these people over I think from Marshall [Space Flight Center, Huntsville, Alabama]. They got different people to experiment on. They would bring guys that were from a seminary, because they didn't drink or smoke, so it didn't affect their baseline data.

They had a spin chair in addition to a bunch of other tortures that they had. Some of these guys—we'd do two or three parabolas, and they'd be just sicker than a dog. Some of them

were really susceptible. Why they even subjected themselves to this I have no idea. They must have paid them pretty well. There were a couple guys that were so sick, and of course we didn't stop. We would do our 40 parabolas no matter what. A couple of the guys were so violently ill that after we landed, we had to open the cargo bay door, and we had to take them off in a forklift. They couldn't even go down the ladder. One guy I remember, he just barfed all over himself, and oh jeez it was awful.

WRIGHT: But you adapted okay to all the aircraft work that you did?

SLEZAK: Yes. After 18½ years on the zero-g plane I never threw up, never got sick. I almost did a couple times. I was going to tell you about the Navy with the spin chair—they wanted to see if they could make me sick. They said, “You can make anybody sick.” Well, they put me in the spin chair, and they'd spin me around, and they would stop. This used to really get to people. This didn't bother me too much. I was doing okay. They did this maybe six times. They'd spin you around real fast while you were in zero gravity and then stop, boom—and I was doing all right.

But then they started going the other direction. Then they would go one direction, then they'd go the other direction. After a while, your vestibular system just can't quite cope with it anymore. Finally I said, “That's it, I don't think I'm going to be needing any more.” I didn't get sick, but I was getting some stomach awareness. When I got out of the spin chair, I was a little woozy there for a while.

This is my friend Ernst Messerschmid, one of the German astronauts, on the zero-g plane [photo number [S84-47148](#)]. We got to be very good friends. Here's Ernst, Reinhard Furrer and

Bonnie [J.] Dunbar [photo number [S84-47252](#)]. Bonnie I knew back when she was an engineer at NASA before she became an astronaut.

WRIGHT: She has a camera in her hand.

SLEZAK: She was just shooting some pictures of something. She was part of the crew. Here's Reinhard Furrer and Ulf Merbold and Ernst Messerschmid and Bonnie.

WRIGHT: Is that [Guion S. -Guy?] Bluford?

SLEZAK: Yes, yes. That's Bluford [photo number [S84-47177](#)]. And here is Guy at home with his family that I shot for a magazine [photo number [S80-37587](#)]. Here's Rhea Seddon; here's me [photo number [S80-39715](#)]. She's practicing on this Resusci Anne [Cardiopulmonary resuscitation (CPR) training mannequin]. This is just a tie-down strap that we have because whenever you exert any force in zero gravity you go the other direction. So later on they made this belt with bungee cords on it so you could secure yourself and you could do CPR in zero gravity.

A funny little story that I can relate to you is when we were testing a laminar flow bench one time that was designed for surgery in outer space. Now, you can't go cutting things and have fluids flying through the air. So this laminar flow bench, had a—

JOHNSON: A vacuum?

SLEZAK: A vacuum, a light vacuum. To try this laminar flow bench, to see how well it worked, we had a bunch of rats and a little guillotine. Nobody wanted to mess with the rats. So the head of the Zero-G Office told me, “You stay up here with Rhea, and you can behead the rats, since you were in the medical corps.” I said, “Okay.” So we went and we beheaded rats there for several days at a time. I told Rhea, “I don’t really think it’ll do anything much.” Because the rat’s heart doesn’t have a lot of capacity to pump that hard. In zero gravity, I’d been doing this for so long I could just about tell how everything would behave. Fluids, they just clump together. If you have a whole bunch of little fluids, they’ll still clump together in one clump. So that’s really what happened. We’d behead the rats, and it would just pool all around their neck and hardly ever go anywhere.

So we did that for several days until we ran out of rats. Then Rhea decided she wanted to try this new belt with the bungee cords to do CPR in zero gravity. She was doing the CPR, and we had to make these big long turns out over the Gulf [of Mexico] because we have to stay within a very confined area that they allow us to fly these parabolas in. Rhea and I are sitting over there against the bulkhead together. Nobody was saying anything, so I figured I’d make small talk. This Resusci Anne is lying there in front of us and I say, “Rhea.” She says, “Yes.” I said, “When do we get to cut her head off?” Rhea said, “You know, Terry, you’re really sick.” She’s been telling me this for years!

Another experimenter came, at one time, with an experiment that had a small candle in it to burn a tungsten strip in zero gravity, and I told him that it looked fine, but it won’t work. He got very indignant and told me it worked perfectly in his lab every time. I told him that there is no convection in zero-g, therefore the candle won’t burn. He didn’t believe me, so we flew the experiment and as soon as we went to zero-g, the candle went out. After that he believed me!

Let's see. This was our astronauts from Indonesia [photo number [S86-30108](#)]. Now, this was an interesting thing [photo number [TS-9](#)]. We built a tent in the zero-g plane, and these people came with some of their vestibular studies, and they had brought pigeons. They took one eardrum out, and then they had some of them that were blindfolded, they had some that were only partially blindfolded, they had some with both eardrums taken out, and all kinds of crazy things. We would go zero, and they would turn a pigeon loose, and we were shooting this with high speed motion picture so they could see how the pigeons would behave, how their vestibular system worked. They would fly all kinds of crazy ways. They would get all excited and we had pigeon crap all over the place. Somebody put this on the bulletin board [referring to photo]. It was awful. You had to wear a mask or something because there was all this pigeon—

WRIGHT: Debris?

SLEZAK: Wasn't the pigeon crap so much, it was the little feathers and stuff that were floating around in the air. It was one of our more nasty jobs. Then the funny thing—when the guys finished doing this that week, they said, —Oh, this was great. Thanks for your support and everything, we're going to get a lot of good data with this. And next month we'll be back with the turkeys.” I said, —You got to be kidding.” They really didn't have any turkeys, but we had a good laugh!

WRIGHT: Well, that was good news.

SLEZAK: We did a lot of the astronaut training on the zero-g plane. The short duration experiments and training that we couldn't do in the WET-F [Weightless Environment Training Facility pool], we did on the zero-g plane. This is Dick [Richard] Truly [photo number [S81-34452](#)] trying to get into his space suit for EVAs [Extravehicular Activities]. We had all kinds of things we used to have to put together for different experiments.

Most of the experiments that we did, because they were so short duration in zero gravity, we would shoot these with high speed cameras at 400 frames per second so they could look at them in slow motion to see what was going on.

This was a solar array panel that was used on the Spacelab [TRW Corporate photo]. They were trying to get all these cables and stuff so that everything worked properly and it would deploy properly. There were a lot of problems there, more than you would think. These were done by TRW [Corporation].

Here's one camera [photo number [S81-29303](#)]*—*we have one up here, we have another one down here. This is, I think, a separate experiment. This doesn't look like much, but when you run at 400 frames, you can only get in maybe three, four parabolas, and then you had to reload these things. These cameras are hard to reload when you're sitting on the ground. But we used to reload these in zero gravity while we were either pulling G's or going zero, because we had to keep reloading the things all the time. You would never get a break.

Here is another experiment that we actually had six high-speed cameras to record the events [photo number [S75-29753](#)]

WRIGHT: What types are those?

SLEZAK: They're Millikens, which we ran at 400 fps [frames per second].

WRIGHT: The other thing that I find interesting is—we've taken a tour of this aircraft. It's not a cool plane to be in. So I imagine setting up took a while before you ever left the ground as well. Did you have to go out there hours before you were going to take off and set all this up?

SLEZAK: Oh yes, sometimes, if we had some really complicated things, we would go out and set up stuff the day before, or maybe the Friday before we were going to start flying on Monday.

I don't think that most people appreciated how much work there was involved. Every week it was a whole new world. People would come with different experiments and different requirements, and we had to build something all the time and make it work. Just all the electronics involved was daunting.

WRIGHT: And the lighting, because you had some restricted lighting.

SLEZAK: Yes. See, we have extra lighting here [referring to photo]. It was very challenging every week. It was interesting though. It never got boring, that's for sure. For this reason I really did enjoy flying on the zero-g plane. I didn't tell anybody that because I thought they'd probably take me off of it if I did.

Here's [S.] Christa McAuliffe and—

WRIGHT: Barbara [R.] Morgan.

SLEZAK: Barbara Morgan [photo numbers [S85-44833](#) and [S85-42475](#)]. I'm back here reloading the camera.

[The following discussion also refers to photo numbers [S78-31714](#), [S78-31715](#), [S78-31716](#), [S78-31717](#), [S78-31718](#), [S78-31719](#)] Here's my friend Marsha [S.] Ivins. These are different experiments that we were doing. This was some kind of a boot that they had with suction cups on it. We were trying that so you could, maybe, secure yourself somewhere in zero-g to perform different activities. This was an experiment with fire extinguishers for zero gravity. That's some more of the shoe.

WRIGHT: Looks like putting on skates. Oh, the suction cups. I see them.

SLEZAK: Then here are some with extensions on it so you could reach places that were too high.

WRIGHT: Look at that.

SLEZAK: Great picture of Marsha.

WRIGHT: That is great.

SLEZAK: Let's see. This is just a picture—we're loading some Milliken cameras on the plane. This is an old zero-g picture [photo number [S79-36845](#)]. Here's Pinky [George D.] Nelson. This was one of these things where instead of doing 40 parabolas, we did 62 of them. Once in a while when we would do a whole bunch, we would shoot a picture of it like this. This is Don

Griggs, who was the head of the Zero-G Office at that time. Then some years later, Bob Williams took over [photo number [S79-35212](#)].

I had a lot of interface with the European astronauts and also the Canadians. These are the Canadian astronauts, and this is some of the European crew here from one of our flights [photo number [S85-44652](#)]. In fact Bobby Gray and I—the other guy that flew most of the time with me on the zero-g plane—we were the only ones invited to the Canadians' splashdown party after the first Canadian astronaut, [Marc Garneau] the only one that flew.

This was actually a quality increase [QI] [referring to award]. This isn't the paper your wall kind. This was a QI for the zero-g support in 1978. I had logged, just for 1978, 103 flight hours on the zero-g plane alone. That isn't taking into consideration the other aircraft we had and the T-38s. I logged 1,431 parabolas, and that was just for one year. I remember when I retired, somebody got out the old log, and they told me how many parabolas that I had done and how much zero-g time I had. They told me that I had more zero-g time than most of the astronauts that were running around.

WRIGHT: I can see that, adding that together.

SLEZAK: Yes, but I did it the hard way, 30 seconds at a time.

When I wasn't flying on the zero-g plane, I specialized in the underwater photography. I found this old picture [photo number [S78-26438](#)]. That's me right there. This was our first underwater tank [Water Immersion Facility (WIF)]. It was like an old oil storage tank, and it was very problematic because they painted it white inside, but the paint didn't stay on, and all of this stuff scaled off, and it would settle to the bottom. So when you went to shoot pictures of an

experiment in there, after you'd been in there for a while all the stuff was getting stirred up. It was white, it was like milk, and trying to shoot pictures in there was really a problem. But all these things had to start somewhere, and that's one of them.

I think Ralph [E.] Payne was shooting some of the underwater stuff. All the pictures, before I came on the scene, were all about this color [referring to the background area of the photo]. Everything. Everything was blue. I said, "That's not the way it's supposed to be." So I got in there, and I put filters on the cameras to restore the color to the underwater pictures, and we started getting really pretty pictures.

[The following discussion also refers to photo numbers [S86-26592](#), [S86-37046](#), [S86-37051](#), [S89-38053](#), [S89-38058](#)] We were trying out this workstation on the manipulator arm underwater. I was doing something here to make sure the thing worked before we started.

WRIGHT: Did you know how to dive before you started doing this?

SLEZAK: No. It was around 1979 when I started the scuba diving—it was with this in mind. It was a NASA class that Bill [William F.] Moran used to teach, and I got certified. Most people that dive now, they're what they call PADI [Professional Association of Diving Instructors] divers. I got certified by the NAUI [National Association of Underwater Instructors]. It's a very, very difficult course. In fact, many of the people that started washed out. It was really difficult. It was so bad, the night before we would have a class I used to have practically nightmares thinking about it. They would scare the bejesus out of you and try to drown you and everything else. I told Bill Moran, "This is a hell of a way to instill any kind of confidence in

people; scaring them to death.” On top of this, I was over 40 years old and the other guys were in their early 20s.

I have to admit, though, years later when I was diving down in Mexico and had bad things happen, I always had this in the back of my mind. “Don’t panic, you’ve been in worse places than this before.” So I guess maybe it did help.

WRIGHT: The training paid off.

SLEZAK: Yes. This is me hanging on to a pole underneath [photo number [TS-10](#)]. Here we did motion picture and still, and then sometimes I would operate the television cameras under water, too. Before, this would just be one big blue picture, like that [referring to photo]. And this is after filtering [photo number [S86-42091](#) and [S86-42097](#)]. Of course, the further back you go, the bluer it is. The only problem was when we had some long duration experiments I didn’t have anybody to change out with me. Since I didn’t have anybody to change out with me I wore double tanks. I would be in there for the duration, however long the experiment was, and sometimes some of them that I was involved in went for four hours or more. I would actually have to get out and get another set of double tanks. By the time we were finished, my skin was falling off. I was the cleanest guy in town!

This was an experiment that we were working on in the WET-F [photo number [S85-30878](#)]. In space they were having trouble capturing something to do with one of the satellites. They tried to figure, on the ground, how they could kludge something together that would work. They came up with this thing which we called the flyswatter [photo number [S85-30879](#)]. Here’s Jerry [L.] Ross. Then this was from [STS] 51-D [photo numbers [51D-42-057](#) and [51D-44-046](#)].

That's where they actually tried it in space. If I remember correctly, I don't think it worked either. I think the things ripped. Here's where they were actually trying the thing in space.

This is a picture that would give you an idea what it looked like from underwater [photo number [S86-41811](#)]. That was in the old WET-F, not the new one [Neutral Buoyancy Laboratory (NBL)]. I always had hoped that I was going to get to dive in the new NBL, but they didn't have it finished by the time I retired.

There was some underwater pictures like one of those I shot that they liked so well, they made a huge transparency of it. In Building 8, we had this humongous display frame that is backlit, as you go down the stairs. It was nice to have one of your photos so prominently displayed.

One of the questions you had asked about was how I interfaced with some of the astronauts. Since I went to school in Japan, I still speak Japanese somewhat and became friends with El [Ellison S.] Onizuka. He didn't speak Japanese and I used to kid him about going on his trip to Japan as his interpreter. I also got to speak with Chiaki Mukai in Japanese. She was the payload specialist that flew on Spacelab. Jerry Ross and I were pretty good friends. One time when we had a break, I gave him this old umbrella underwater. I said, "Maybe this'll keep you from getting wet." Then Jerry Ross gave me this picture [photo number [S87-38966](#)].

WRIGHT: [Reading photo inscription] "I wonder if Terry knows that his trunks are down around his knees." He's looking at you. He's a nice man.

SLEZAK: Jerry is a really nice guy.

WRIGHT: Those are pretty neat. I like the umbrella.

SLEZAK: Yes. That takes care of the underwater stuff.

You had asked about how did my roles and responsibilities evolve over the course of the 30-plus years I worked at JSC. Well, partly this was driven by attrition. When we had people that retired and died and transferred—you have to understand, for the most part everything was civil service. We did have some contract people that worked for us—but the workload never abated. As people left, it was just more work on the people that were left. It got to the point that they finally, for about every civil service person that we had working in an area, they replaced us with four contractors. They told us that the government is saving money this way. Maybe so, but sounds strange.

Then we would be moved to another position somewhere. This is how I probably ended up doing underwater photography and the zero-g plane and a lot of these other things. Then finally we were even replaced on the zero-g plane by some of the new people that came. Most of us were getting a little long in the tooth by then anyway.

One of your questions was “what do you believe is my most important accomplishment and greatest challenge?” Of course, the Apollo flight films were a challenge and certainly an accomplishment. I also had a couple of inventions that I made while I was there, one of which is an iodine comparator. This thing flew on several Shuttle flights.

Other accomplishments I think were the many and varied experiments that we did on the zero-gravity plane. Then you asked me what was my greatest challenge. Staying alive was—at some points got scary.

I wanted to tell you about the two inventions that I had. Somewhere I had a picture, and I even have the hardware, but I couldn't find it. One of them was a grain interruption device used for printing good quality 8 x 10 pictures from 16-millimeter film. This could be used if you had some kind of a pin-registered camera like a Milliken or a good quality camera. If you take one frame of 16-millimeter—it's so small—and project it, the grains are big as baseballs. But if you can interrupt this grain pattern, it looks all nice and smooth.

We actually did use it on a couple occasions I can think of where they wanted some pictures of some building progress. At the time, the event had passed already, all we had was motion picture film. You could take this motion picture film, and you find the picture area that you want. If you were going to make a print, let's say your correct exposure is 12 seconds on an enlarger. Well, you could take this thing, and it had a claw to mimic the pin-registered camera. You make a three-[second] exposure on the first frame. You move to the second frame, make a three-second exposure. Move to the third frame and the fourth frame until you have your 12 seconds of exposure. While you've done that, you have moved to four frames and you disturbed the grain pattern, so you come out with a fairly nice looking print. Didn't work on moving objects or anything, it had limited use, but it was a neat thing. I used to have some sample photos that I made, but I have no idea where they are either.

The other device that I'm really very proud of—because I did this whole thing myself from beginning to end—and this is a thing we called the iodine comparator. As I said, this was used on several Shuttle flights. The problem that was the mother of the invention, was the astronauts were complaining about the drinking water and the water that they had to use to reconstitute their food on the Shuttle. It looked like tea. The way the water system worked, it

was purified with iodine. It was in a resin. The water from the supply bypassed this resin and it was supposed to leach out a certain amount of iodine to purify the water.

Because the water that is produced by the fuel cells would get hot, they found out that during liftoff the rocket burns generated an awful lot of heat, and the water system was somewhere close enough adjacent to this that it really disturbed the resin system. When they drew water, it dumped out a tremendous amount of iodine into their water system. Well, first off they had to quantify how much iodine was leaching out. I had a meeting with Dick Sauer of the Life Sciences Division, some of the astronauts and other people that were involved in the food situation on the Shuttle so that we could come up with some kind of a quantitative analysis for the water before they could fix the problem.

I got to work on this iodine comparator. The food people came up with the square food containers like they used for the astronauts' food [photo number [S80-30663](#)]. This is what they reconstitute the food in. So I had them make up a whole bunch of these food containers with known parts per million amounts of iodine for me. Also, another set with starch in the containers that turned the iodine blue. Then I used my knowledge of photo filters, and I made a whole bunch of exposures from a neutral density calibrated step wedge on a sensitometer in the various color shades of the iodine samples that I had. I had to make a whole bunch of these in yellow and blue so I could pick out the best and discard the rest.

I then had to match the exact same density as the samples appeared when looking through them in this square food container; therefore, I used the translucent food container bottoms sandwiched in back of the filters. To accomplish this, I made a round device with a square hole in it. You would take one of these food containers, and you could take a sample of the iodine, then you'd plug the container into this hole, and around the outside I had varying density and

color of filters that matched the color of the iodine. When I first started, I wasn't absolutely positive how this was going to work out. But I theorized that no matter what kind of a light source they had behind this thing, it was all going to be the same light source that is coming through the sample and the filters, so it should work [photo number [S89-30108](#)].

After tweaking a lot of these filters with other color filters, neutral density filters and so forth, I came up with a jig that Tech Services cut out of wood for me. I made up this jig with all of these filters and the cutout for the food drink container. When you held these up to the light, you could discern the almost exact parts per million visually from the water sample. So I took this wood mockup to another meeting with the astronauts and passed it around. We gave them various samples, and they could identify the parts per million perfectly. Since I used all materials that had already been flight-qualified, the only thing we had to change was we made the frame for the flight item out of aluminum. Tech Services made that for me, and it flew on several Shuttle flights [STS-28, STS-30, and STS-34]. Eventually this led to fixing the iodine problem on the Shuttle. They made two of these; one for a backup. That was one thing I was very proud of because I made the whole thing myself with my own two little hands. It did contribute to solving a major problem, especially if you were in the flight crew and had to drink that stuff and put it in your food.

[If anyone is interested in using this technology for similar purposes, we gave a paper at an SAE International meeting in Williamsburg, Virginia, in 1990. It has been added to the NASA Technical Reports Server (NTRS) and can be accessed at <http://ntrs.larc.nasa.gov/search.jsp>. The search criteria are as follows: NASA Johnson Space Center; Accession Number: 90A49389; Document ID: 19900062334; Report Number: SAI PAPER 901356.]

WRIGHT: I'm sure they were very cooperative in helping, knowing that was going to benefit them greatly. [Can you share with us any other accomplishments during your time as NASA?]

SLEZAK: Yes. And all this I can prove so you know I'm not giving you just a story. I was the only person to have a one-man photography show at NASA at the rec [recreation] center. I was the only one from the Photographic Division, as far as I know—I used to teach a photographic class at the rec center. The only one from PTD [Photographic Technology Division] to have an experiment that flew on several Shuttle flights. Also, I didn't sign up for this when I came to work at NASA, but you had asked me about what kind of procedures were in place for some of the film handling. Well, I'm the one who wrote all the procedures manuals for the Division for a long time.

These procedures manuals—I tried to pick my words very carefully. The thing is with writing procedures manuals, you don't have to just be a writer, you have to know the process and how the things work. So I wrote these procedures manuals, then they turned all my writings over to a tech writer, who didn't know anything about the equipment or processes. He went through and changed it into about third grade reading material—it even destroyed the procedure. Some of it didn't even make any sense. I went to John Holland, and I told him, “This is absolutely ridiculous. Don't put my name on those things.” So they didn't. It has John Holland's name on it, but John didn't write any of them.

I was the only photographer that solely shot a scuba diving movie for the Veterans Administration [U.S. Department of Veterans Affairs]. We did this down in Mexico, and this was a documentary on scuba diving for paraplegics. We took a couple guys that had the use of their arms but not legs, and we trained them and took them down and actually went scuba diving

out in the ocean. I did all this underwater [filming] as well as the top stuff. The Veterans Administration was so happy with it they made many copies and sent it around to all the Veterans Administration hospitals because it opened up a whole new world to these guys that were somewhat confined to wheelchairs. All you have to do is get some big husky guys to take them and throw them in the water and drag them out again. Many problems, but we learned a lot about doing this.

I was also the only photographer whose "extracurricular" film was used for the opening of one of the mission films [for STS-2]. We were out there in the desert. You go out there and freeze all night until the Sun comes up, because everybody has to be in place. A lot of it was because of security, but I couldn't sit around and freeze. I was out there with all this equipment for the landing. I went out while it was still dark and started single-framing the scene. Bloop. Bloop. Bloop. And I did this for hours until the Sun came up. When you play this film back, it was all dark and there was the equipment there on the lakebed, and then the Sun suddenly comes up. Whoom! It was pretty spectacular. They liked it so well they used it for the opening of the STS-2 mission film.

I was also the first chairman of the Directorate Human Resources Committee. This was to solve problems and answer questions of the personnel in the various Divisions. I felt that we had made some pretty good strides in some areas there.

I'm the only photographer who wrote a regular newspaper column for several newspapers. Didn't have anything to do with NASA, but actually I was more famous in Houston as an opera singer than I was anything else, as I sang with the Houston Grand Opera, Houston Symphony and at several nightclubs. I used to write some columns for some different

newspapers. This is an opera review of "The Seagull" [refers to newspaper]. This is the Sharpstown [neighborhood in Houston] newspaper. Well, you get the idea.

Also, I was the custodian of all the original flight film that is kept in Building 8. White Sands [Test Facility, Las Cruces, New Mexico] have the first run dupes [duplicates] of that. All the original film is at JSC.

Then the European astronauts gave me this because I shot a bunch of pictures for them during their training. A rare item [refers to gift].

Bit of another weird job. I went over to New Orleans one time, and they had some guys that were working on using computers and digitizing old documents. So they asked NASA for some help. This will give you an idea of the kind of [documents] we were working with. But they looked a whole lot worse than this [referring to document]. Some of these things were just faded away. I went over there, and I used ultraviolet light and a green very narrow band cutoff filter to copy these things, because some of them were so bad that you look at them and you just couldn't read anything. I tried to make some of this old ink reappear so that they would at least have something to digitize. Then they would take this and try to clean it up more with a computer. It was an interesting job. I was over there for a week doing that.

WRIGHT: You want to see if there's anything else that you want to cover before we get out of your way?

SLEZAK: Well, I tried to come up with some stuff of substance at least.

In addition to all the other hats, I was the Classified Material Custodian for the Photo Division. I had to go to school to learn how to do all of these forms and procedures for

transferring classified documents and materials, and I was one of the people responsible for the film vault that holds all of the original lunar films [photo number [TS-11](#)]. Every year the FBI [Federal Bureau of Investigation] would have to come and give you an update and check to make sure that you were doing everything correctly. I had my Classified Custodian document hanging on the wall there in my office. One day they told me the person is coming from the FBI to give me my yearly update. A bunch of guys in the office said, “Man, you’re not going to leave that up there, are you?” I said, “Sure.” This is what I had hanging on my wall [refers to photo of himself wearing a KGB uniform with a Russian flag in the background attached on the corner of the Classified Custodian Document].

This is a KGB uniform that I bought when we were in Russia. This lady comes from the FBI and walks into my office where I had some pictures that I shot, and she’s looking around. Suddenly she starts laughing when she comes to my Classified Custodian Document and says, “Well, you certainly have a sense of humor.” That was about the extent of my update that year.

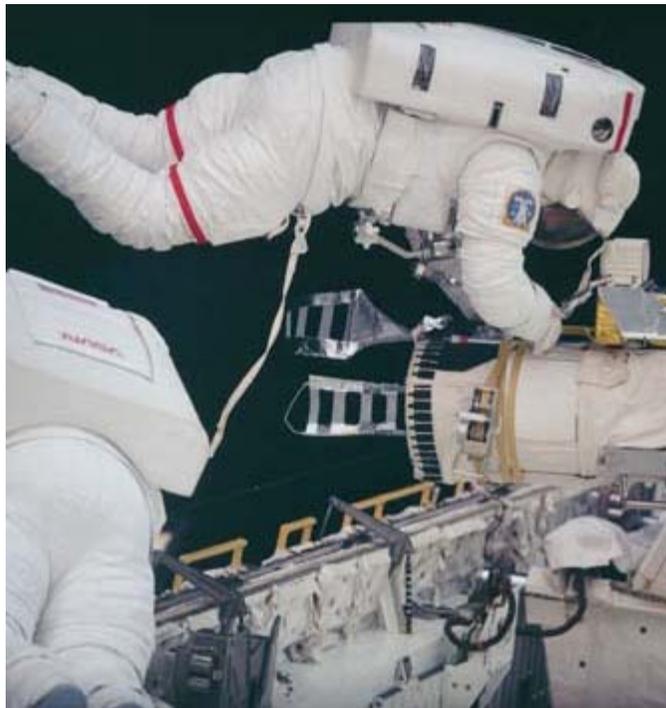
WRIGHT: Now, I just don’t think we can go anywhere else after that, I think it’s a good place to stop for now.

SLEZAK: Thank you for your efforts; I really enjoyed it.

[End of interview]

[Follow this link to view all the photos in Terry Slezak’s photo gallery.](#)

NASA Johnson Space Center Oral History Project
Photos provided by NASA JSC Image Repository and Terry Slezak



51D-042-057.jpg - Photographic documentation showing Mission Specialist (MS) S. David Griggs, in an Extravehicular Mobility Unit (EMU) with red stripes and MS Jeffrey A. Hoffman, in an EMU, working on attaching tools to the end effector of the Remote Manipulator System (RMS).

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51D-44-046.jpg - The Space Shuttle Discovery's Remote Manipulator System (RMS) arm and two specially designed extensions move toward the troubled Syncom-IV (LEASAT) communications satellite. Behind it the Earth's clouded surface can be seen.

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C-72-797.jpg - Console used to remotely control multispectral cameras, a bank of six cameras that shot infrared and regular film, both color and black-and-white, for the JSC Earth Resources Program.

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S69-25155.jpg - Part of the interleaving device that we used to interleave 16-millimeter and 70-millimeter film taken during the Apollo 11 mission. The film was put into light-baffled canisters and then into the autoclave for decontamination.

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S69-40054.jpg - Terry Slezak in the Lunar Receiving Lab showing Moon dust on his hand from the Apollo 11 film canisters.

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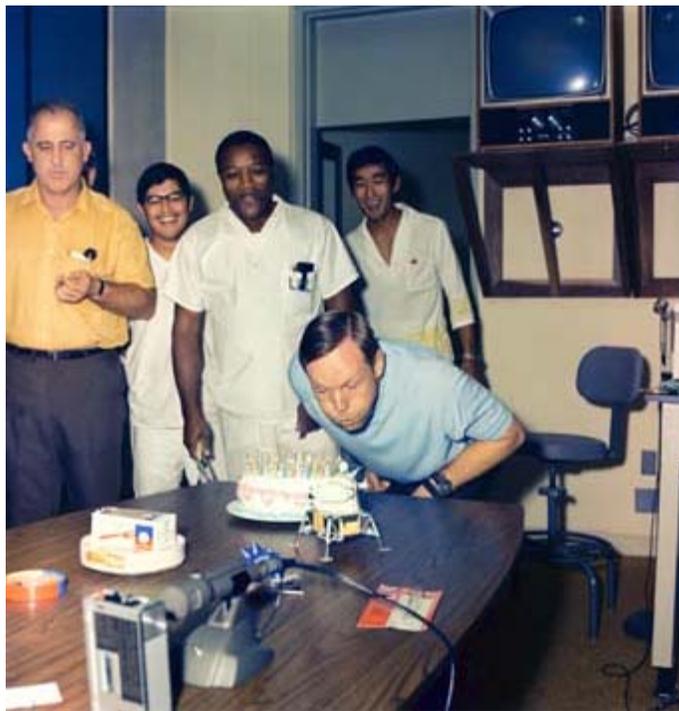
S69-40055.jpg - Terry Slezak in the Lunar Receiving Lab showing Moon dust on his hand from the Apollo 11 film canisters.

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S69-40306.jpg - The crew of the Apollo 11 mission is seen dining in the Crew Reception Area of the Lunar Receiving Laboratory. Left to right, are Astronauts Buzz Aldrin, Michael Collins, and Neil Armstrong.

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S69-40953.jpg - Astronaut Neil Armstrong blowing out candles on his birthday cake in the Lunar Receiving Laboratory Crew Reception Area after the Apollo 11 mission.

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S69-40958.jpg - Astronaut Neil Armstrong serving his birthday cake in the Lunar Receiving Laboratory Crew Reception Area after the Apollo 11 mission.

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S69-42020.jpg - Food line personnel serving Apollo 11 crew and support personnel in the ŠÜŠ Crew Reception ÁE^Ā

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S69-42022.jpg - Apollo 11 crew and support personnel in group shot at the end of the quarantine period in the LÜŠ

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S69-45480.jpg - Interior shot of the Mobile Quarantine Facility.

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S69-45481.jpg - Interior shot of the Mobile Quarantine Facility.

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S69-45482.jpg - Apollo 11 crew inspecting their film in the Lunar Receiving Lab after the mission.

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S69-45483.jpg - Apollo 11 crew inspecting their film in the Lunar Receiving Lab after the mission.

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S69-45484.jpg - Apollo 11 Astronaut Buzz Aldrin inspecting film in the Lunar Receiving Lab after the mission.

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S69-45485.jpg - Apollo 11 Astronauts Mike Collins and Buzz Aldrin in the Lunar Receiving Lab Crew Reception Area.

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S69-45486.jpg - Landing and Recovery Division Systems Engineer John K. Hirasaki removing equipment and decontaminating of the interior of the Apollo 11 spacecraft inside the Lunar Receiving Lab.

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S69-45487.jpg - Landing and Recovery Division Systems Engineer John K. Hirasaki removing equipment and decontaminating of the interior of the Apollo 11 spacecraft inside the Lunar Receiving Lab.

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S69-60424.jpg - Astronaut Pete Conrad, commander of the Apollo 12 mission, holds two lunar rocks brought back from the Moon by the Apollo 12 astronauts.

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S69-60426.jpg - Astronauts Pete Conrad and Dick Gordon inspecting lunar rocks brought back from the Moon during their Apollo 12 mission.

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S69-62291.jpg - Astronaut Pete Conrad with lunar rocks brought back from the Moon during the Apollo 12 mission.

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S69-62292.jpg - Astronaut Pete Conrad with lunar rocks brought back from the Moon during the mission.

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S69-62293.jpg - Astronauts Pete Conrad and Dick Gordon inspecting lunar rocks brought back from the Moon during their Apollo 12 mission.

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S69-63056.jpg - Apollo 12 crew and support personnel in group shot at the end of the quarantine period in the ŠÜŠĚ

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Photos provided by NASA JSC Image Repository and Terry Slezak



S71-31799.jpg - C-130 Hercules cargo planes used for remote sensing in the JSC Earth Resources Program

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Photos provided by NASA JSC Image Repository and Terry Slezak



S73-35615.jpg - Photographers Pete Stanley and Terry Slezak with] @ ħ equipment used in the Earth Resources

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S73-36694.jpg - WB57-F Canberra, NASA 926; one of the planes used for remote sensing in the Earth Resources Program.

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S75-29753.jpg - MIT zero gravity experiments onboard the KC-135. Six high-speed cameras were used to record the events.

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Photographic Technology Division
November 3, 1976

S76-30674.jpg - Photographic Technology Division group photo taken November. 3, 1976.

NASA Johnson Space Center Oral History Project
Photos provided by NASA JSC Image Repository and Terry Slezak



S78-26438.jpg - Training suited subject in Water Immersion Facility (WIF), Building 260.

NASA Johnson Space Center Oral History Project
Photos provided by NASA JSC Image Repository and Terry Slezak



S78-31714.jpg - Astronaut Marsha Ivins on the KC-135 performing a Zero G evaluation of intravehicular activity (IVA) boots.

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S78-31715.jpg - Astronaut Marsha Ivins on the KC-135 performing a Zero G evaluation of intravehicular activity (IVA) boots.

NASA Johnson Space Center Oral History Project
Photos provided by NASA JSC Image Repository and Terry Slezak



S78-31716.jpg - Astronaut Marsha Ivins on the KC-135 performing a Zero G evaluation of orbiter fire extinguishers.

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S78-31717.jpg - Astronaut Marsha Ivins on the KC-135 performing a Zero G evaluation of orbiter fire extinguishers.

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S78-31718.jpg - Astronaut Marsha Ivins on the KC-135 performing a Zero G evaluation of intravehicular activity (IVA) boots.

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S78-31719.jpg - Astronaut Marsha Ivins on the KC-135 performing a Zero G evaluation of orbiter fire extinguishers.

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S79-35212.jpg - Astronaut Marsha Ivins on the KC-135 performing a Zero G evaluation of intravehicular activity (IVA) boots.

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S79-36845.jpg - KC-135 Zero G aircraft crew photo on the occasion of setting a new parabola record – 62 parabolas on September 6, 1979.

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Photos provided by NASA JSC Image Repository and Terry Slezak



S80-30663.jpg - Astronaut Rhea Seddon in the Orbital Flight Test galley with Shuttle food tray.

NASA Johnson Space Center Oral History Project
Photos provided by NASA JSC Image Repository and Terry Slezak



S80-37587.jpg - Guion S. Bluford, wife Linda Bluford, and two sons at home.
The photo was taken by Terry Slezak for a magazine article.

NASA Johnson Space Center Oral History Project
Photos provided by NASA JSC Image Repository and Terry Slezak



S80-39715.jpg - Astronaut Rhea Seddon practicing on Resusci Anne, the cardiopulmonary resuscitation (CPR) training mannequin, during a Zero G flight on the KC-135. Terry Slezak can be seen on the right with the camera.

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S81-29303.jpg - Terry Slezak in KC-135 Zero G aircraft with the TRW solar array panels.

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Photos provided by NASA JSC Image Repository and Terry Slezak



S81-34452.jpg - Astronaut Dick Truly testing EVA spacesuit don and duff activities during a KC-135 Zero G flight.

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Photos provided by NASA JSC Image Repository and Terry Slezak



S82-29273.jpg - Northrup Strip (White Sands Space Harbor) convoy support operations personnel for STS-3 (the only STS mission to land at White Sands, March 30, 1982).

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Photos provided by NASA JSC Image Repository and Terry Slezak



S83-25846.jpg - Astronaut Vance Brand with T-38 training aircraft.

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S84-27585.jpg - NASA T-38 Talon training aircraft.

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S84-43036.jpg - Terry Slezak and Judith Hayes on the KC-135 Zero G aircraft.

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S84-47139.jpg - Ulf Merbold, Ernst Messerschmid,
Terry Slezak on the KC-135 Zero G aircraft.

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S84-47148.jpg - Ernst Messerschmid on the KC-135 Zero G aircraft.

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S84-47177.jpg - Reinhard Furrer, Ulf Merbold, Bonnie Dunbar, Wubbo Ockels, Ernst Messerschmid, and Guy Bluford on the KC-135 Zero G aircraft.

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Photos provided by NASA JSC Image Repository and Terry Slezak



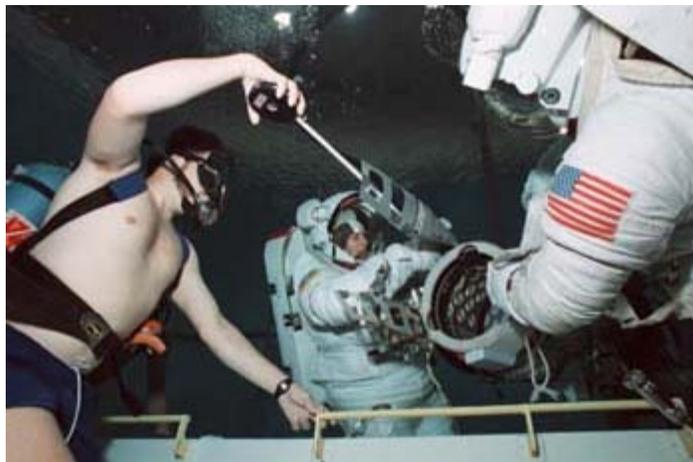
S84-47252.jpg - STS 61-A crew members Bonnie Dunbar, Reinhard Furrer, and Ernst Messerschmid training in Building 9A before their mission.

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Photos provided by NASA JSC Image Repository and Terry Slezak



S85-30878.jpg - Underwater EVA simulation of "Flyswatter" attachment in the Weightless Environment Training Facility (WETF) prior to the STS 51-D mission in April 1985.

NASA Johnson Space Center Oral History Project
Photos provided by NASA JSC Image Repository and Terry Slezak



S85-30879.jpg - Underwater EVA simulation of "Flyswatter" attachment in the Weightless Environment Training Facility (WETF) prior to the STS 51-D mission in April 1985.

NASA Johnson Space Center Oral History Project
Photos provided by NASA JSC Image Repository and Terry Slezak



S85-42475.jpg - STS 51-L "Teacher in Space" Christa McAuliffe and her backup crew member, Barbara Morgan (in back), training on the KC-135 Zero G aircraft. Terry Slezak is seated behind.

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S85-44652.jpg - Post-mission Zero-Gravity flight on November 12, 1985,
with members of the STS 61-A crew and Spacelab participants.

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Photos provided by NASA JSC Image Repository and Terry Slezak



S85-44833.jpg - STS 51-L "Teacher in Space" Christa McAuliffe (at top) her backup crew member, Barbara Morgan, and Payload Specialist Greg Jarvis training on the KC-135 Zero G aircraft.

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S86-26592.jpg - Weightless Environment Training Facility (WETF) simulation and training, January 1985.

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S86-30108.jpg - Indonesian Payload Specialists Taufik Akbar (top) and Pratiwi Sudarmono training in Zero-Gravity on the KC-135 aircraft. Terry Slezak is on the left holding the camera.

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S86-36599.jpg - Zero-Gravity training on KC-135. Terry Slezak is (on the left with camera) is capturing the activity on film.

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S86-37046.jpg - Terry Slezak on the Remote Manipulator System (RMS) in the Weightless Environment Training Facility (WETF).

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S86-37051.jpg - Terry Slezak on the Remote Manipulator System (RMS) in the Weightless Environment Training Facility (WETF)

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Photos provided by NASA JSC Image Repository and Terry Slezak



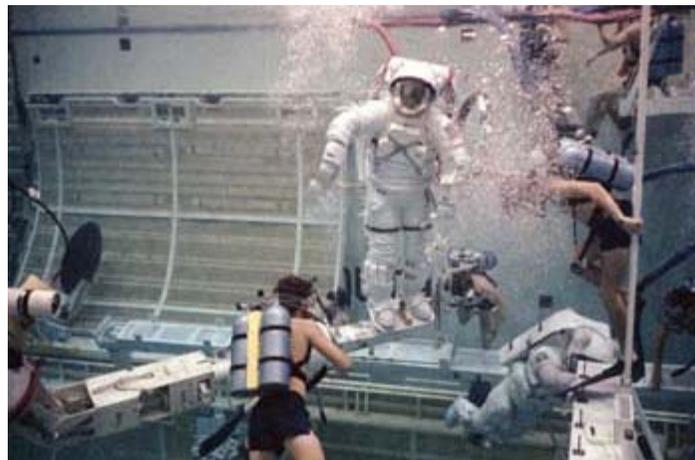
S86-41811.jpg - EVA astronaut training in the Weightless Environment Training Facility (WETF).

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Photos provided by NASA JSC Image Repository and Terry Slezak



S86-42091.jpg - EVA astronaut training in the Weightless Environment Training Facility (WETF).

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Photos provided by NASA JSC Image Repository and Terry Slezak



S86-42097.jpg - EVA astronaut training in the Weightless Environment Training Facility (WETF).

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Photos provided by NASA JSC Image Repository and Terry Slezak



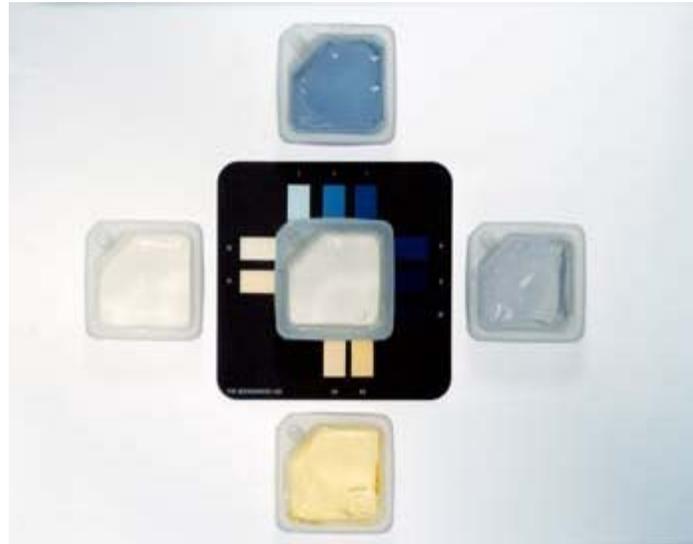
S87-31871.jpg - View of Stephanie Wells and photographer Terry Slezak free floating in KC-135 during a Zero G flight.

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Photos provided by NASA JSC Image Repository and Terry Slezak



S87-38966.jpg - Astronaut Jerry Ross with mock up of British payload SKYNET in the Weightless Environment Training Facility (WETF).

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S89-30108.jpg - Documentary views of the Iodine Comparator, which uses film chips for potable water analysis.

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S89-37526.jpg - Terry Slezak on a Triad Rowing device during Zero-Gravity testing in the KC-135 aircraft.

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S89-37528.jpg - Terry Slezak on a Triad Rowing device during Zero-Gravity testing in the KC-135 aircraft.

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Photos provided by NASA JSC Image Repository and Terry Slezak



S89-38053.jpg - Underwater documentation using the AX-5 and MK III 8.3 PSI suits and the Space Shuttle 4 PSI suit in WETF evaluation runs, May 1989.

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Photos provided by NASA JSC Image Repository and Terry Slezak



S89-38058.jpg - Underwater documentation using the AX-5 and MK III 8.3 PSI suits and the Space Shuttle 4 PSI suit in WETF evaluation runs, May 1989.

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TS_1.jpg - Terry Slezak documenting a burn test in the Thermochemical area at JSC.

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TS_2.jpg - Documentation of a suit test in Building 9.

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TS_3.jpg - Terry Slezak filming from a platform in Building 9.

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TS_4.jpg - Aerial Photo Section. Terry Slezak is in the front row, third from left.

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TS_5.jpg - Terry Slezak in front of a T-38 Talon training aircraft.

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TS_6.jpg - Astronaut Anna Fisher and Terry Slezak at White Sands Space Harbor, New Mexico.

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TS_7.jpg - Astronaut Kathy Sullivan and Terry Slezak on the KC-135 aircraft.

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TS_8.jpg - Astronaut Dale Gardner and Terry Slezak during a Zero G flight on the KC-135 aircraft.

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TS_9.jpg - Zero G vestibular studies with pigeons on the KC-135 aircraft. Terry Slezak wearing red hat and filming the bird's flight.

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TS_10.jpg - Terry Slezak in the Weightless Environment Training Facility (WETF).

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TS_11.jpg - (Photo and caption appeared in Society of Photographic Science and Engineering Journal, October 1987)
Frank Zehentner (left) and Terry Slezak prepare to remove an aluminum case containing rolls of original color film from the primary NASA humidity-controlled cold storage vault built for the permanent preservation of spaceflight films. This is one of the two vaults maintained at 0°F (-18°C) and 20% RH located at the NASA facility in Houston, Texas; the other vault, situated in a remote corner of the NASA property, is used to store a complete duplicate set of the films, together with written documentation. A third NASA vault at the White Sands Missile Range in New Mexico, which also operates at 0°F (-18°C) and 20% RH, houses a second duplicate set of backup copies and documentation of the spaceflight films.

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TS_12.jpg - Terry Slezak in the Weightless Environment Training Facility (WETF).

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TS_13.jpg - The Space Shuttle Enterprise on top of the Shuttle Carrier Aircraft on the way to the Paris Air Show in 1983. Terry Slezak and his wife happened to see the docked vehicles and took this photo of the flight over the ruined walls of the Roman Forum while vacationing in Rome Italy.

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TS_14.jpg - The Space Shuttle Enterprise on top of the Shuttle Carrier Aircraft on the way to the Paris Air Show in 1983. Terry Slezak and his wife happened to see the docked vehicles and took this photo of the flight over the ruined walls of the Roman Forum while vacationing in Rome Italy.

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TS_15.jpg - Photography crew at White Sands, New Mexico. From left to right, Terry Slezak, unknown, Gene Edmonds, Dick Tuntland, Ramon "Benny" Benavides, Bobby Smith, Ralph Payne, Bill Ferriera.

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TS_16.jpg - Terry Slezak in the Weightless Environment Training Facility (WETF).

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TS_17.jpg - Terry Slezak in the Weightless Environment Training Facility (WETF).

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TS_18.jpg - Terry Slezak during a Zero G flight on the KC-135 aircraft.

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Photos provided by NASA JSC Image Repository and Terry Slezak



TS_19.jpg - Terry Slezak in the Weightless Environment Training Facility (WETF).

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TS_20.jpg - Terry Slezak in the Weightless Environment Training Facility (WETF).

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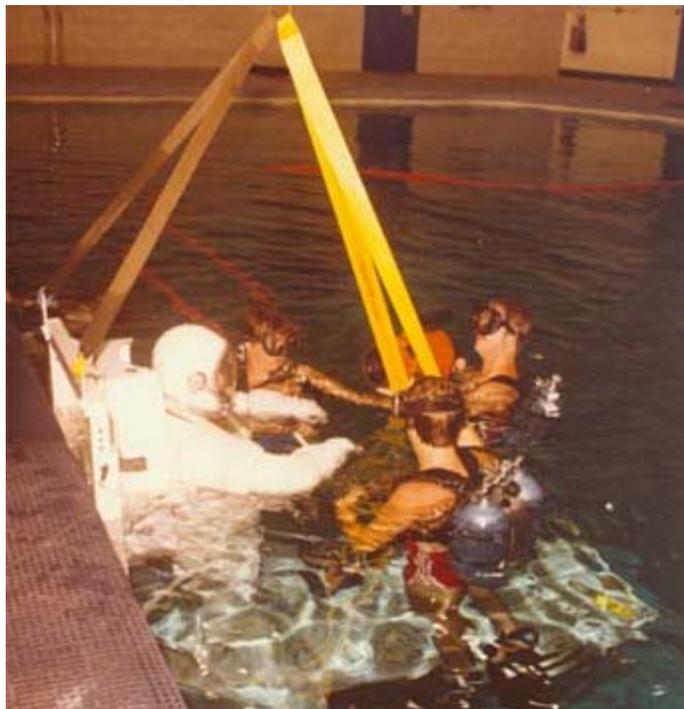
TS_21.jpg - Terry Slezak (front) in the Weightless Environment Training Facility (WETF).

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TS_22.jpg - Astronaut training in the Weightless Environment Training Facility (WETF).

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TS_23.jpg - Astronaut training in the Weightless Environment Training Facility (WETF).

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TS_24.jpg - Terry Slezak in the Weightless Environment Training Facility (WETF) with "pet" alligator.

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TS_25.jpg - Terry Slezak in the Weightless Environment Training Facility (WETF) with "pet" alligator.

NASA Johnson Space Center Oral History Project
Photos provided by NASA JSC Image Repository and Terry Slezak



TS_26.jpg - Terry Slezak documenting a Space Shuttle landing.