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TERRENCE W. WILCUTT
INTERVIEWED BY REBECCA WRIGHT
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WRIGHT: Today is January 21st, 2016. This interview with Terry Wilcutt is being conducted in Houston, Texas, for the JSC Oral History Project and for JSC's Knowledge Management Office. The interviewer is Rebecca Wright. This session is a continuation of previous sessions where you shared information about your astronaut selection and training and your first [Space] Shuttle mission, STS-68. Today we'd like for you to focus on the next two missions, the two that you had within two years that brought you to the Russian space station Mir first as a pilot, then the second as a commander. So if we could, start with STS-79, which was in 1996, where you were the pilot. Talk about when you first learned that you were going to be going not just on a mission but you were going to be visiting the station.

WILCUTT: It was really interesting to me considering I'd spent so much time in the Marine Corps with the Russians of course as the enemy, and now was going to go visit their space station. It was pretty remarkable. Fortunately Bill [William F.] Readdy, he was also a naval officer, and he was assigned as the commander and actually already spent time in Russia over there. He had contacts and had enough information for us that frankly we were all looking forward to working with them.

The Russian government is quite a bit different than the Russian people themselves. They're generous to a fault, very welcoming. I used to tell people they would give you the coat off their back in the winter if they thought you needed it. They're just as generous as you would

ever find a group of folks. Like people everywhere they just want stability, a better life for their kids. It was a very enjoyable experience.

WRIGHT: Was there a significant amount of difference in the training for this mission going to Mir than your first mission?

WILCUTT: The first mission was Earth science of course. This [mission] required training for rendezvous and docking. It also required some basic training on Russian systems and the Mir, so we had to travel to Russia and do training over there. Rendezvous and docking, there was quite a bit of training on that. We used to tell people that it really wasn't difficult but it was very delicate and you had to approach at—I don't remember the final speed, something like a foot a second, which is a really slow rate of speed, necessarily slow to bring two spacecraft together and get the docking. Of course Reads did the actual rendezvous and docking part of it and I sat in the pilot's seat and did burns that were used to close the gap between the two spacecraft until Reads took over and flew it all the way on in.

It was a great crew. Are you ready for me to just talk about some of the crew members?

WRIGHT: Yes, please do.

WILCUTT: I have the crew patch on the wall right there. Reads, that was his third flight, his first one as a commander. I was the pilot. Tom [Thomas D.] Akers was MS2 [Mission Specialist 2], which is like the flight engineer on a commercial airline. Jay Apt was MS1. It was not his first

spaceflight, same with Tom and Carl [E.] Walz. I guess I was the only rookie on that flight. I wasn't a rookie [astronaut] anymore, I was a rookie pilot. Of course I'd already flown in space.

Then we were taking up John [E.] Blaha to swap out for Shannon [W.] Lucid. Speaking of that swap, that was the other part of the training. We had to train in how to transfer all that cargo to Mir and then where to stow the things that we were bringing back down from Mir, all the science that Shannon had done that we were going to bring back to Earth.

That's really the basic Shuttle systems. The training is the same for all those, but for the mission-specific stuff, rendezvous and docking and the transfer and stowage of all that equipment. Then we had a few onboard experiments. It seems like that was the flight where we had a new furnace, they tried out a Protein Crystal Growth experiment, which is for structure-based medicine design. I think we also had a Mechanics of Granular Materials experiment, which was to look at the behavior of soils in earthquake zones to help with building codes.

We did transfer some experiments over to Mir that John would operate while he was up there. I don't remember much of those, except one of them I think was an enclosed aquarium type thing, which was interesting, because we flew one of those up on the second flight, STS-89. You could look through a little peephole and see the actual fish in the aquarium. It didn't have a Plexiglas plate or something like that where you could look in and see the thing, but you could look there and see fish going by upside down, right side up, things like that. Just like they tell you here on Earth that when people look at aquariums their blood pressure goes down, their pulse rate goes down, they relax, I used to spot crew members, myself included, staring in that hole and checking on the fish, and just looking a little longer than you need to check on them.

Ironically, as we saw those fish going by, I think when we got back down to Earth we found out that all the fish had passed away early in the flight. It was just the little pump that was

making them look like they were swimming past, but we didn't know it, and we surely enjoyed watching them regardless.

WRIGHT: That's not funny, but I guess it is in a funny kind of way. You had a delay in leaving a couple times because of the hurricanes, and then they did some switchout for things with the SRBs [solid rocket boosters].

WILCUTT: Yes, we had a hurricane. Of course we didn't mind that except we just worried about Shannon having her stay extended up on Mir. I think the hurricane threatened KSC [Kennedy Space Center, Florida] and they had to roll back into the VAB [Vehicle Assembly Building] to protect the Shuttle. That delayed us a little bit.

Then the other one was they had used a new material when they were putting together the segments of the solid rockets. Then there was a question about whether that material was really safe or not. The program decided to de-stack those SRBs and use the old material we'd been using that was proven safe.

I think instead of just doing that for us they just gave us different SRBs, some that were scheduled for the next flight. But, that did delay us, that rollback and de-stacking, it did delay us a little more. We finally launched and went up to get her.

Gosh, was she a treat. Shannon Lucid, she's one of the most pleasant, dedicated scientists you'll ever meet in your whole life. The Russians absolutely loved her. She is just so dedicated to the mission and to science, and she's such a pleasant professional. We all enjoyed getting to know her.

When you get in space, adjusting to zero gravity takes a while. Usually by flight day three you're adapted to where you're not bumping into everything. You think that you're pretty good up there by the middle of the flight. You move around easily, you're not hitting anything, your feet aren't getting in anybody's face.

Then you see someone that's been up there for a long time like Shannon. She was just like a cat. She would just zip in and stop and just hold her position. Her gracefulness in zero gravity was so different than ours. It was something to see, someone that's been up there long enough to really adapt to zero g, what they perform like versus the rest of us that are just up there for a few days.

WRIGHT: I bet she was looking out the Mir waiting for you to get there.

WILCUTT: Yes, well, she was.

WRIGHT: Can you describe what it was like to see the Mir [for the first time]?

WILCUTT: Just beautiful. Reads was looking out the back window. He made sure we all floated back there and looked out the window to see it ourselves. Just a beautiful thing up in space orbiting the Earth. I don't have a better word to describe it. It fills you with hope and wonder really to think about people living up there, because it is a remote outpost. What an engineering feat for them to have put that up there. I think it stayed up there for 15 years, something like that, a real solid piece of machinery.

Once we went ahead and rendezvoused and docked and we opened the hatch and we greeted each other, there are just some things you never forget. We being Americans and Shuttle folks where literally every minute is bookkept to do work, even the meals and the rest periods are bookkept, so you're told when to do everything, so we got the hatch open, we hugged each other. The Russians and John and Shannon and all of us. We basically said, "Valery [Korzun], where do you want all this stuff? Let's get busy." He wouldn't even talk to us. He just said, "Nyet, nyet." Russian for no. He insisted that we follow him in there and he took us into the service module, the living quarters. We had to sit around the table and he gave us the traditional Russian salt and bread and some kind of rehydrated drink or something. We had to sit around and talk and visit.

Then after we had done that then we could get busy doing work. They were used to long duration spaceflight. It's not a sprint for them like a Shuttle mission. It was relationships matter and we're going to be up here for a long time. We're going to be working together. So let's sit down and visit for a while, and then we'll get busy. It was quite an education in long duration spaceflight. I don't think any of us really appreciated how much relationships matter in that kind of environment, long duration stuff.

It was great. We swapped stories, jokes, and ate Russian food. Then eventually Valery said, "Okay, now let's talk about the work." We got busy. We got everything done. He was certainly right about we needed to visit first and then get busy. It was a good thing. He's an exceptional cosmonaut.

WRIGHT: I remember reading that there was some logistics of moving so many supplies up there at that time period, including bags of water. Those first few days you were working 18 hours just to get everything done because you just had so much to get done.

WILCUTT: The time just passes. Down here when it starts getting dark you know it's time to go to bed and your body starts getting at it then. Up there since it changes from daylight to nighttime and back to daylight every 45 minutes, it means nothing to you anymore. If you didn't have a clock set and a flight plan you'd probably stay up even longer than that before you realized that you should go to sleep.

What else are you going to do? It's work. It's all fun. It's just a blast. I think altogether it seems like we transferred about 4,000 pounds of stuff over with John, and then we took back a couple thousand or so for Shannon, stuff that she'd done. I think altogether we moved about 6,000 pounds of material. Everything that I've ever done up there was fun. Nobody minded that.

WRIGHT: The complex, it wasn't just the station when you got there. From what I remember reading, you docked to the Mir which also had a Soyuz and a Progress and then now *Atlantis* with the Spacehab. It was quite a heavy component.

WILCUTT: Of course it didn't make any difference, being in space. I'll tell you, that Spacehab was a nice piece of equipment. Some crews when they're docking without a Spacehab, say you had seven people in a crew, and all you had was the Shuttle to live and work in, that's a pretty crowded environment. There's not that much living space there. But with that double hab back

there, we had the tunnel that led back to it, then this volume in the hab itself. Even before we were docked and afterwards we still had lots of room.

Of course when you're docked to Mir, then we have the equivalent of a multiroom house, don't forget.

WRIGHT: A lot of running space.

WILCUTT: It was fantastic. Lots of room. Pretty cluttered, because you need to think really hard before you throw something away in case you might need it. There were boxes, equipment Velcroed or bungee corded to almost every wall in the Mir. It's things you adapt to. When you first get in there your impression is "Wow, look at all this clutter." After you've been there moving around working in it it becomes invisible. That's what it is.

In the living quarters, the service module, there were some touches of home. Lots of cassette tapes for music and some little toy birds that sing when they detect movement, just little pieces of home. Of course the cosmonauts had their sleeping quarters, they had family pictures, and things like that in there too. It really was home to them.

WRIGHT: It'd be such a neat experience. Like you said, you went on an Earth science mission the first time, and then the second time you go visit your neighbors in space.

WILCUTT: I was very grateful for the flights I got to do, Earth science, Mir, and of course the last one was the [International] Space Station [ISS] before anybody moved in there. So I think I covered all the bases except for the Hubble [Space Telescope].

WRIGHT: Do you recall any moments with Shannon on the way back that she talked about what her experiences were like? When she got back you were greeted with a lot of press attention, because Shannon had returned, she had been extended, now she set a new record for American woman in space.

WILCUTT: She didn't really talk about what it was like, but the cosmonauts had. How much they really loved having her up there, how personable, friendly, professional she was.

She was the perfect example of what you would want your astronaut representative to be like on the Russian space station. She's a wonderful person. I thought it was nice that when we were undocking, she was leaving home, she did float to the back window and watch her old home disappear as we backed away and did our burns to leave it. She was something else.

When we got back down another interesting part was the President, Bill [William J.] Clinton, was in town I think for a fundraiser. He went out to Ellington [Field, Houston] to greet us when we flew into Ellington. Of course he wanted to welcome us and welcome Shannon back because she did set a record for women in space. It was just a wonderful experience all the way round. She deserved the attention. That was really something what she did. You go off and you're the only one from your country, you don't hear your own language for all those many months, and then you come back down. It was something.

I wasn't there, but I was told that when we landed at KSC you get off the Shuttle and there's a little walkway that leads into the astronaut van that takes you into crew quarters. She walked on it and then she stopped. Of course people were around her to make sure she didn't fall, and they asked her if she was okay. She said, "I'm fine. I just like feeling the Sun on my

face and the breeze in my hair." It really drives home to you how much you really are cut off from all that.

WRIGHT: Very simple pleasures of Earth. She never seeks attention for herself.

WILCUTT: Goodness, no. She's a very dedicated scientist just like I said. But the rest of the crew, Tom Akers, I think he's a math professor at University of Missouri [Missouri University of Science and Technology, Rolla] now. Wonderful person to fly with. He was just an outstanding MS2 flight engineer. There was nothing that he didn't keep an eye on, nothing that Bill and I did that he wasn't watching us to make sure it was done correctly. Very personable and popular individual in the Astronaut Office.

Jay Apt was running a museum up in Pittsburgh [Pennsylvania], the Carnegie Museum of Natural History. Wonderful human being, brilliant guy. Carl Walz, one of the nicest people on the planet. He used to be the lead singer in the [astronaut] rock and roll band [Max Q], very very pleasant and competent person. Of course he wound up being on the [Expedition 4] crew to the International Space Station and spent a lot of time in Russia training for that flight. Very good man.

Then John, Air Force colonel, very calm, competent person. He had his own training to do for Mir, so we just did a few things with him to make sure he could egress the Shuttle and knew his way around. But gosh, he'd already been the commander of the Shuttle, so he was more than prepared for that.

It was a great crew. Everyone got along rather well.

WRIGHT: That's always helpful. How long were you back when you were told that you were going to be commander?

WILCUTT: About a year. All my flights were two years apart, '94, '96, '98, 2000, just like that. At the time with the [Shuttle] Mir Program and then the ISS Program the flight rate had ramped up. My entire class benefited from that. We flew on a regular basis.

They like to tell you about a year out what your next flight is going to be. Going to move on to STS-89 now. Sure enough, that was my first flight as a commander. That's the usual flow, two flights as a pilot, then you move over to the left seat and command a mission. That crew was just exceptional. Probably every commander tells the same thing because the office is full of really good folks.

Joe [F.] Edwards, the pilot, we were in the same test pilot school class and test pilots at the same time. He used to tell people, and it's true, that he was the Navy's finest pilot, and I was really fortunate to have him assigned as my pilot. There's just absolutely nothing that he can't fly and understand every system in it. Just a wonderful person and an outstanding pilot.

Mike [Michael P.] Anderson, MS2, African American guy. He brought crew resource management into our cockpit, the way they operated. He was a commander of a heavy aircraft for the Air Force, I think a [Boeing] KC-135 [Stratotanker], and they operated that way, and he thought that we should, and gosh, now everyone operates that way. He didn't invent that. He just brought it to our crew from the Air Force as the way to back each other up on critical procedures. We instantly realized that was a safer and better way to do things and adopted it. Just a great person. Unfortunately he passed away on [Space Shuttle] *Columbia* [STS-107 accident], and it's a real loss. We used to call him Senator. He had so much integrity and it just

oozed out of him. Joe and I used to talk to him about maybe he should leave us and go run for Congress because we could use people like that up there. Just a fantastic human being.

This was Joe and Mike's first flight. Jim [James F.] Reilly, PhD geologist, selected out of the oil industry. Just a brilliant person. He had a PhD but he was so attuned to operations, it was really something. He eventually joined the Navy also while he was here as a reservist and somehow worked his way into cockpits as often as he could. Just a great, brilliant person.

Then we had a Russian, Salizhan [Shakirovich] Sharipov.

WRIGHT: Which was very different from what you had before, because now you have a cosmonaut as well as three other rookies.

WILCUTT: He was great. Unfortunately the Russians sent him over late, so there was a limited amount of things that we had reserved for him to do. The closer it got to launch and they still hadn't sent him, then we started having to assign those things to make sure they were done to other people. We did give him a lot of duties, but I wish we'd had him earlier. What a gem of a person he is too. Very professional. Really good guy.

Then of course Bonnie [J.] Dunbar. I think it was her fifth flight. She had a wealth of knowledge. Bonnie and I had flown before, and every other person on the crew it was their first flight. Of course I was a first time commander. She handled training people for the science part of the mission and I handled getting them ready to do the ascent, entry, all the Shuttle things. The docking, things like that.

WRIGHT: A big difference was when you had gone before until this mission there had been two life-threatening episodes on Mir. One with the fire, one with the collision. Did you have any concerns? Or what were your concerns about taking a crew there?

WILCUTT: None. I don't think any of us—if you have a problem you fix it, then you just keep going on. So the collision, there wasn't going to be any other docking other than ours while we were up there, so that couldn't happen. There's an interesting story about how that happened and the aftermath of that, but it all concerns the Russians, none of it has to do with us. Then the fire, there was an investigation. It was one of the candles that they burned to produce oxygen. Turned out there was some debris inside of it that caught on fire. Unless you need to burn candles then that can't happen either.

We just don't spend time worrying about things like that. You spend time, "Well, if this happens, where are the masks to put on, and where's the egress route?" The procedure was always the Americans would make their way to the Shuttle right away, and the Mir crew would stay on the Mir and then handle the emergency.

We were prepared in case something did happen, but you really don't spend any time worrying about those, you just prepare in case it does.

Of course we were taking up Andy [Andrew S. W.] Thomas to replace Dave [David A.] Wolf.

WRIGHT: For the last leg [NASA-7].

WILCUTT: Dave Wolf was in my class so I knew him really well. It was a treat to go up and pick him up. Like I think you just said it was the last exchange [of astronauts]. Someone had to go up and pick up Andy later, but it was the last exchange along with again a bunch more supplies. Maybe we moved 7,000 pounds of stuff.

Still had a double Spacehab, so we had all kinds of room going up and lots of room coming back. It was just a blast. The crew bonded so well; they all became very fast and lasting friends. It was a real treat. Again you couldn't ask for a higher level of skill as astronaut and crew members than what they had on that crew.

WRIGHT: You now had the opportunity to dock, and you actually tried a different maneuver, more of what would be done on the ISS, you had an opportunity to take the Orbiter in a little differently than you had seen Bill Readdy do it.

WILCUTT: I think Reads docked on the +VBAR [along the station's velocity vector]. I think on this one we docked from underneath. It was a fuel-saving maneuver because of the orbital mechanics, you use less gas. They wanted to try that out, and we did. Gosh, I think we used, I don't remember, something like a third less fuel docking, so it was significant. It was a treat to try that and prove that that was true.

Again, it's not difficult to do that. It's just a delicate operation. You have to be in a very narrow window and a very slow speed to bring the two spacecraft together without docking. But frankly, the Shuttle was engineered so well and it flew so well that that wasn't a difficult thing to achieve. And we're trained so well. The training teams don't get enough credit for that. They've looked at every single one of these things. They evaluate anything that could possibly

go wrong and then make sure you experience that and you're comfortable with the procedures to either prevent it or to recover from it, then they turn you loose.

The training teams, there's nothing that goes on up there that they shouldn't get credit for because they spend a lot of time thinking about it and then preparing the crew to do just that. They prepare you for success. They're wonderful.

WRIGHT: Just always a mystery to me how to prepare something that you haven't done before.

WILCUTT: Those simulation and training teams, they literally are experts, and they have studied every possible system about what could go wrong and make sure you're trained for it. At least it's everything they can think of.

I can't really say that any of my flights had some large surprise that they hadn't prepared us for. A wonderful group of folks. Very very very dedicated.

WRIGHT: But can they train you to be a commander? I'm just curious because this time you were commanding this crew and you had the same mission, but not really, because you had different objectives to accomplish up there. Talk about being a commander and what you did to pull those folks together to bond so well.

WILCUTT: Of course everyone has their own style of commanding. You may have to alter your usual style based on who you get, but literally the crew, we all bonded almost immediately. One, it's a pretty exciting thing to be assigned. But gosh, to a person, they were really wonderful crew members. Again with Mike Anderson saying, "Hey, here's the way we do cockpit resource

management in the Air Force," in his community. We as a matter of routine backed each other up on everything that we did to make sure that it was successful.

Being the commander, you're ultimately responsible for the safety and success of the crew, the ship, the mission. You're assigned that way. You assume those duties. It's not the first thing you've been in charge of, whether it's a department in either your previous job, like in the military, or a flight of airplanes going someplace, or some branch in the Astronaut Office. No one that's a commander has never been in charge of anything. You bring whatever leadership skills and history that you have into those positions. Like all good commanders, you adapt to make sure that you're successful in the end. That's it.

It's fun being a commander, it's fun being a pilot. Also I had a model. Bill Readdy was I thought just an outstanding commander. I had of course been his pilot on that second mission, and I thought he set a wonderful example for what a commander should do in his relationship with the crew. He did a great job.

Frank [L.] Culbertson was head of the Shuttle-Mir Program. He was a former Shuttle commander also. The way he ran the program interface with the crews was also—there wasn't any lack of role models as far as good commanders in the office.

Like I said, it's fun. It's nice being the commander. You're responsible, there's no getting around that, but most of the people over there don't have any trouble being in charge of something like a space mission.

WRIGHT: Can you tell us about the landing? You weren't the pilot; you were in charge, and you got to land that Shuttle.

WILCUTT: It's just like the Shuttle Training Aircraft [STA, modified Gulfstream II]. Before you can command I think you have to have 1,000 landings in our Shuttle Training Aircraft. I think to fly as the pilot you had to have 500, and 1,000 as commander. So you're so well trained in that. I think all of us would agree that landing the Shuttle, you're flying around the heading alignment cone or HAC as we call it, we all think, "Gosh, this is just like the STA," and it was.

I thought it took a nice picture at the end of it. We landed, we rolled out, and I was just fortunate to stop the front wheels exactly on the centerline stripe. Some reporter took a picture of Joe and I on either side of the wheel remarking how we had just done it. Evidently they published that picture under the headline "Best Shuttle Landing Ever." Of course if you do that 10 times you might be lucky enough to get it exactly on the middle, because it's not like you can see it. You're just guessing where the tire is. Of course the commander sits to the left of centerline, but it worked out well and made a story for Joe and I to talk about.

WRIGHT: Did you have an opportunity to enjoy the moment of being home? Or did you move right into training for the next flight?

WILCUTT: Whenever you return from a Shuttle mission you take some time off to get your land legs back and be with your family. Then you have about a month of PR [Public Relations] duties to do. We have a lot of Centers to visit and talk about the mission, and education groups, civic groups, anybody that has requested that the crew come or individuals come and give a speech on what they did on their flight.

You do that and then you move back into your job. Somewhere in there, I don't remember how many months it was after that flight, but they asked me. We must have been on

the ground about October to June, something like that the following year. Then they asked me to go to Russia to be the Director of Operations in Russia for six months. I did that, I think I left in June or July, came back in January. I got to see part of the Russian winter. I think it was 26 below zero when I left there in January, but it was wonderful.

WRIGHT: Were you able to take your family with you?

WILCUTT: No. It was a wonderful experience. I already talked about how generous and welcoming the Russian people are. I worked with cosmonauts that were friends, some of which I had flown with, either joined when we docked to Mir or for instance Salizhan. Of course that's where their home is; they live over there. I got to be with friends, crew members, astronauts that were in training over there. Except for the cold it was a wonderful experience really.

WRIGHT: An interesting time too because you mentioned earlier that it was on the last part for Andy, and you were over in Russia. Were you supporting him on the ground?

WILCUTT: No, the crews we support over there are the ones that are in training for the next mission. So Bill [William M.] Shepherd, who was going to be the commander of the first [ISS] flight [Expedition 1], he was over there. Carl Walz who I'd flown with, he was over there with Dan [Daniel W.] Bursch. They were going to be the [Expedition 4] crew. Jim [James S.] Voss and Sue [Susan J.] Helms were over there also [Expedition 2], and their training teams.

Of course you try to make sure things are running smoothly for them and keep morale up. It was a wonderful experience really. We did some things. We built a bar so they had an

informal place. Shep, he said, "I do all this training with my crew." He has a lot of wisdom about teams of course. He's a former [Navy] SEAL [Sea, Air, and Land, specialized teams]. He said, "I don't have any place to hang out with them informally, and it's so critical that we get to know each other and trust each other. I need someplace to do that."

A couple guys from MOD [Mission Operations Directorate] here, just wonderful human beings, Ronald [B.] Lee and Sean [M.] Kelly, they came over there with plans to build a bar in the basement of one of the cottages so that Shep and the other crews could hang around with their Russian people and get to know each other.

While the crews were back in America, they came over there [to Russia] and we went shopping in Russian hardware stores and bought all this equipment and built this bar. Just by luck the day the crews were coming back Tom Hanks [actor/filmmaker] is in Star City getting a tour. He was in Russia filming that movie *Cast Away*, where he was on the island by himself. We were with him, and Ginger Kerrick asked him if he and his entourage were hungry. They said they were, so she said, "Well, come on back to the cottages, and we'll fix you some lunch."

So they did. We told them the [ISS] crew was coming back, and took him downstairs and showed him the bar. He said he would hang around and wait for them. When they [the crew] got there, they hadn't been told that we had done this. They managed to use some excuse to get the crews to come down the steps and into the basement. There's this bar with bar lights and a dartboard and everything you would find out here, and there's Tom Hanks leaning against it. It was a great thing.

WRIGHT: That must be a great memory for them. Just the look on their face.

WILCUTT: It must be. Of course he signed it. He said, "I'll have a Tang, Tom Hanks." I guess they put polyurethane or something on top of it to make sure nothing could ever happen with that signature. He's a wonderful person. That was a great trip.

We also got Armed Forces Network to beam in satellite TV, so the crews could watch sporting events. Then we got a big screen TV to put in so they'd have a place to gather and watch those events. I think we made it a little more like home while they were in the middle of taking Russian courses on the Russian segments of the Space Station in Russian.

That's a tough tour. That mental toughness that you have to have to get through something like that, all those crews had that. They were just great. So did the trainers. Everything the crews were doing, the trainers were right there with them, the American trainers that were sent over there. Great people. Ronald and Sean coming back to build that bar, that was above and beyond. That was all done after hours too. They'd work till one o'clock in the morning putting that thing together.

WRIGHT: Heroes in a different light, weren't they?

WILCUTT: Oh, you bet. That bar is still used over there to this day.

WRIGHT: That's great. If you want to stop now, because I know you have a meeting. We can pick up what else was going on then the next time, and then go to that last flight.

WILCUTT: Sure. You bet.

[End of interview]