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JOHN F. HALL, JR.
INTERVIEWED BY SANDRA JOHNSON
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JOHNSON: Today is July 19, 2017. This interview with John Hall is being conducted for the NASA Headquarters Oral History Project. Mr. Hall is speaking with us today by telephone from NASA Headquarters in Washington, DC. The interviewer is Sandra Johnson.

I want to tell you again how much we appreciate you calling in and taking your time while you're in the States to do this for us. We really appreciate it.

HALL: You're welcome.

JOHNSON: I want to start by talking a little bit about your background. From what I'm looking at, your bio [biography], you had a career before you ever came to NASA. I just want to talk about that background, and maybe a little bit about your education and how that led to your work with NASA in 1994.

HALL: Sure, thank you. My education was principally in international relations and international law, both in undergraduate at Georgetown University [Washington, DC] and then in the law program at Washington and Lee University in Lexington, Virginia. I did some study during those years in Moscow [Russia] and what was then Leningrad in the Soviet Union [now Saint Petersburg, Russia] and also in Warsaw, Poland, again focusing on international relations and international law subjects.

After that, and having concluded, I guess, about four years in the United States Senate on the staff of Senator Pete [Pietro V.] Domenici from New Mexico, I began working for a law firm here in the Washington, DC, area, which now is I think KLG [K&L Gates LLP (Kirkpatrick & Lockhart Nicholson Graham)]. It used to be Preston Gates [& Ellis], and it was consumed by another firm. It might have been Kirkpatrick that acquired them.

But anyway, I did international law, international trade, and export control work for that law firm for several years. I had a bit of my practice which was split between civil defense litigation on behalf of airlines principally, and export control matters challenging the government, doing combat with the government on export control issues. I subsequently went to the Department of Commerce in their Office of the General Counsel to serve as an export control attorney for I think it was four years or so.

From there, NASA had been looking to develop an Export Control Program here at the Agency, given some problems that they had been experiencing with export control compliance in the early '90s. So NASA had invited me to explore opportunities to come work for them in the Office of the General Counsel here. After some time, maybe a year or so, some back-and-forth, I finally decided to make the move over to NASA. I worked in the Office of the General Counsel from, I guess, about 1994 until 2000.

You're probably getting the clear picture that I'm simply not able to hold a job, because I moved around from the Senate to private practice to the Commerce Department to NASA. But I very much enjoyed the work that I was doing in the Office of the General Counsel here, and we did in fact establish the Agency's first Export Control Program under the leadership of a gentleman named Bob [Robert] Tucker in what was then the Office of External Relations. I was his lawyer for that purpose.

At the same time that we had set up the Export Control Program, I also participated with the NASA delegations in the drafting and ultimate execution of the International Space Station [ISS] Intergovernmental Agreement and the Memoranda of Understanding with the ISS partners and participating agencies that was concluded in 1998.

My principal contributions to the ISS IGA, or Intergovernmental Agreement, concerned not surprisingly export control, what we called the transfer of goods and technical data, the customs provisions, and the Code of Conduct for the International Space Station which is enshrined in Title 14 of the Code of Federal Regulations. That was another part of my focus.

I mentioned the customs provisions of the ISS Agreement. I also at that time, while I was with the Office of the General Counsel, had the opportunity to draft a new set of regulations that's now in Title 14 of the Code of Federal Regulations. It's Title 14 Part 1217, which concerns the duty-free entry of items for NASA. This was a big victory for the Agency, to be able to import items for launch, and also for our own use from other countries, without having to pay duties on them and without having our partners pay duties on them.

As a result of this authority, all of our agreements with foreign governmental entities and other foreign entities now include reciprocal provisions for duty-free entry of the objects that are exchanged between the agencies in our international space cooperation. Those were a couple of highlights from my time in the Office of the General Counsel.

In 2000 I came to the Office of what was then External Relations, what is now the Office of International and Interagency Relations, to become the new NASA Export Control Administrator for the program that Bob Tucker and I had established several years prior. I was in that capacity for several years. Then I became the Director for the Export Control and

Interagency Liaison Division of the Office. That was the position which I held until I retired in February of 2017.

JOHNSON: If you don't mind, let's go back to that first position that you held where you were in the Office of the General Counsel. That was an interesting time. As you said, things were changing at NASA, and they felt like they needed expertise that you would have. Of course you had studied in Russia, and in '93 President [William J. "Bill"] Clinton announced that Russia was going to become a full partner for the ISS. So I'm assuming that your Russian background had an appeal too for them at that point, aiding with those negotiations.

HALL: I don't know whether I would say that that's true. I think that they wanted me to participate in those negotiations because they needed lawyers with international relations expertise. That's probably more it than the Russia background. Obviously the Russia background didn't hurt, but there were other people at NASA who had much better Russia experience and expertise than I had. What they wanted was a good international lawyer. While they couldn't find a good one, they did find me.

JOHNSON: You mentioned that you helped with that team that was negotiating those agreements for ISS. Did you work any on the negotiations for Shuttle-Mir [Program]?

HALL: No. Shuttle-Mir was concluded just before I came to NASA. The agreements were concluded before I came to NASA. The program itself was not.

JOHNSON: Of course, during Shuttle-Mir we were also working on agreements for Russians to fly on the Shuttle. That continued. Did you have any involvement in any of that at that point?

HALL: Some, but fairly limited. I was much more on the sidelines for Shuttle-Mir and the Russian cosmonauts on the Shuttle activities. Much more involved in the ISS IGA and MOUs [Memoranda of Understanding].

JOHNSON: Let's talk about the IGA and the MOU and the work with that team. Were you their counsel as they were working through those negotiations? Talk about your role with them.

HALL: I was one of the counsel. I was not the lead counsel. The lead counsel for the ISS IGA and MOUs was a gentleman named Jay [E. Jason] Steptoe, who's currently the Deputy General Counsel of NASA [retired in December 2017 after this interview]. As I said, my principal contributions to the ISS IGA—I was the lead negotiator for these sections on tech [technical] data and goods transfer, what we call the export control stuff, the customs provisions, criminal jurisdiction, and the Code of Conduct.

The other parts of the agreements focusing on the management and the contributions and what have you were largely handled by Jay. There were a few agreements for ISS contributions like from ASI, the Italian Space Agency, where I was the lead on some aspects of that and traveled to Rome for some of those negotiations. But I would say that Jay Steptoe was our lead counsel for NASA and I was supporting counsel for the IGA.

JOHNSON: You were working with export control and the Code of Conduct. As far as the export control negotiations, I know there were some issues with ITAR [International Traffic in Arms Regulations] regulations and those sorts of things were going on at that point. Part of what that team did is they worked to get the Space Station classified as a civil space satellite under the Commerce Department's jurisdiction to circumvent some of those problems with dealing with a country like Russia and international partners. Was that anything that you worked on?

HALL: Oh yes, I had a great deal of involvement in that, both from my time on the regulatory side when I worked for the Commerce Department and then again on the NASA side when I was NASA's lead for export control on many of these things.

That all started with a group called the Space Policy Working Group, the SPWG, back in the early 1990s. You're correct. Because Russia was listed by the State Department in the International Traffic in Arms Regulations, or ITAR, as a proscribed destination, that meant that there was a presumption of denial for any exports of items—including the Space Station, because all spacecraft were captured under the ITAR's U.S. Munitions List, or USML. Presumption of denial on any exchanges with Russia that had to do with spacecraft—that wasn't going to be too workable if you brought them into the Space Station Program.

A couple of things happened in the early '90s. One was the successful transfer of the ISS itself. We're not talking about the payloads, and we're not talking about the launch vehicles, just the Station itself was transferred to the Commerce Control List. Most importantly, the operations technical data, that is the technology needed to operate it, was also transferred to the Commerce Department. That was a big win for NASA, and a big win for U.S. companies supporting the International Space Station Program.

The other thing that happened was that Russia was removed from the International Traffic in Arms Regulations proscribed countries list. That helped to ease things not just for NASA, but for others interested in doing business with Russia. So those were two pretty key developments that happened in the 1990s, and they both helped the Space Station Program to advance substantially.

JOHNSON: You mentioned getting that transferred was helping as far as being able to operate the Station and to make it easier even for other entities, other companies to work with it. Can you talk a little bit about why it was important to get that transferred, and how those ITAR regulations prevented the work from going forward? Just a little bit of background on the benefit of getting all that done. As you said, it was really important to continue the work, but why was that important?

HALL: It's helpful to understand a little bit about the relative bureaucracies that are involved. Recall that we are talking about the 1990s. We're not talking about 2017 where there's been almost a decade's worth of effort on export control reform that was begun under the [President Barack H.] Obama administration.

Instead we're talking about 20-something years ago, 25 years ago, and it was a very different world in the bureaucratic realm of export control. The State Department, which administers the ITAR, had a tremendous licensing burden that resulted in very long processing times. Multiple needs for referrals and re-referrals, both among agencies and back-and-forth between applicant companies and others.

They had resource issues, but they also had policy constraints that made dealing with U.S. Munitions List items, items that are subject to the ITAR—with virtually any country, even our closest allies—very difficult. In contrast, the Commerce Department regulations and the Commerce Department licensing was subject to statutorily imposed processing timeframes and deadlines. There were formal appeals procedures that existed for the items that were captured on what is known as the Commerce Control List, or the CCL, which is governed by the Export Administration Regulations, or EAR, that's administered by the Commerce Department.

There was far less of a license backlog. There were meaningful opportunities for appeal and resolution. There were firm, or at least more firm, deadlines on how long the government could take in processing your application and giving you an answer. Items that were subject to the ITAR were really—trade and technical exchange in those items, including spacecraft, launch vehicles, and a whole bunch of other stuff that NASA deals with—was very, very difficult for the companies that support our programs, but also support the U.S. space industry.

So given the more difficult regulatory environment that existed all through the '90s, it was indeed very helpful to have the ISS carved out from the ITAR, and the operations technology carved out from the ITAR and subject to the Commerce Department's jurisdiction. Subsequent to all of this, as I said, beginning in 2009, the inauguration of President Obama—he issued a presidential directive, I think it was Presidential Policy Directive Number 3, which began the Export Control Reform Initiative, or ECRI. That took place over the course of his entire administration and resulted in several significant revisions to the Control List, and also to processes that govern the adjudication of export license requests.

JOHNSON: There was a lot going on in the '90s. In the early '90s, with the fall of the Soviet Union there were a lot of political things going on. I've read some of the reasons that President Clinton wanted to bring Russia into these international negotiations was to give them something to do, instead of some of those other programs that they could have gotten involved in that would not have been in our interest.

HALL: That's correct, right. There were initiatives across the board—not only in the administration, but also in Congress—to do just that.

Clinton was elected in '92. In '93 I believe, maybe even a little sooner, Congress, led by Senators Sam [Samuel A.] Nunn [Jr.] and Richard [G. "Dick"] Lugar, passed a law whose objective was to stem the threat of proliferation of Soviet and Russian missile technologies and nuclear capabilities, principally to let us say the highest bidder, in places of the world that may not be the most responsible custodians of that kind of technology.

The idea was, I think, they put hundreds of millions of dollars into the effort to essentially help the Russians get a handle on these potential misapplications of their very advanced nuclear and missile technologies. It was called the Comprehensive Threat Reduction effort, and there was a whole office over at the Department of Defense that was dedicated to this.

Likewise, the administration chose to let what was first, I believe, a \$400 million contract to the Russians for certain services that would support our joint space activities. It was through programs like this, that an objective of giving them something to do other than misbehave or help others to misbehave, that those objectives were at least realized in part.

I think there's a lot more to it than just that. The investment actually pays off in scientific and technical cooperation. Not to put too fine a point on it, but there ain't a whole lot that's going well right now between the United States and Russia. But space sure is.

JOHNSON: Right, it has continued to.

HALL: I think that's a fair observation.

JOHNSON: Yes, I think so, too. During that time when you came on and then those early negotiations for ISS, they did take a long time. It took four to five years to get all of those negotiations done and signed in 1998 when the IGA was finally signed. Do you want to talk about that time period of working? Any observations during that time on whatever parts of it that you were working on.

From what I've read and people we've talked to, some of the other partners, when Russia was brought in there was some concern about how things were going to be divided, how things were going to work, and getting everyone to be happy with everything and sign everything took a little time. Talk about maybe some of the different things you did during that time supporting those negotiations. Any specific details or anecdotes about that time period.

HALL: Sure. With regard to the decision itself to bring the Russians on board, I played no role in the deliberations that led to that decision. I was on board at NASA just about the time that the partnership had agreed that they wanted to take this step.

You had mentioned the other partners needing some convincing. I have also heard from people who were intimately involved in that effort that the U.S. could have done a better job of communicating that to our original [Space Station] Freedom partners. But be that as it may, it was all done, and everybody decided to move forward. Much of what makes the ISS Program work today really doesn't owe much of its existence to me. My focus, as I said, was on the export control stuff, criminal jurisdiction issues, the Code of Conduct.

Code of Conduct was interesting because we had a different approach than our partners—particularly one of our partners—with regard to opportunity for personal enrichment, if you will, and compensation as a result of your activities as an astronaut or cosmonaut. We had several sessions that required clear exchanges of principles and understandings to get to the point where we have this code of conduct, which deals not only with the conduct of the crew but also the authority of the commander. It's important to have these understandings—who's in charge, and what are you allowed to do—because you are up there for six-month increments, sometimes more, and there's not a lot of handholding that goes on with issues like that.

In fact, I'm aware that at least one of our current members of our Office of the General Counsel here at Headquarters, who also happens to be the Agency's Ethics Counsel, has written a paper on the whole Code of Conduct. I had supplied him with notes and drafts. You can see the Code of Conduct itself. It's in the CFR, as I mentioned, in the Code of Federal Regulations. I forget what section but it's back with the ISS stuff. [14 CFR 1214.403].

As far as the subjects in the IGA for which I was principally responsible—and there weren't that many, as far as those go—perhaps the one that required the most engagement was probably on the idea of criminal jurisdiction and the Code of Conduct.

JOHNSON: How long did that take to work on the Code of Conduct and criminal jurisdiction?

HALL: That was towards the end. That was one of the last things we did. That was '96, '97 timeframe, close to '98. I forget what the exact date of signature was for the IGA, but it was one of the later issues. Of course we were able to get agreement on it, so that was nice.

JOHNSON: Was it something that was identified at the beginning that was going to need to be done, or was that something that came up later?

HALL: I think it grew out of the discussions of criminal jurisdiction for whatever reason, because when you're in space there are international law principles regarding jurisdiction over acts. There are certain things that are, for example, considered to be universal crimes that any country in the world can assert jurisdiction over anybody in the world who commits them. I'm talking about hijacking, piracy, I think slave trading, and a few other things. There are not a whole bunch of what we call universal crimes.

But, otherwise, you are traditionally bound to jurisdictional principles that result in where the offense was committed, that is whose territory it was committed on; or who committed it, that is nationality. An American who commits a crime in France could be tried by either the French or the U.S., but could not be tried by the South Africans.

Of course, in space, you don't have the clearest territorial bases that you have down on Earth. Even though the contributions of the countries are considered their territory in space, for example the U.S. Lab [Destiny module] or the Russian habitation modules—it gets a little trickier. I think from those discussions regarding criminal jurisdiction, the idea for a code of

conduct was a natural outcome of setting up that regime, and that became an important element. It's a requirement for every participant on the ISS to acknowledge, by signature, the requirements of the Code of Conduct.

JOHNSON: Was that code based on anything else in existence, or because this was so different—and like you said you weren't on Earth, you're in space—was it something that was created specifically for this?

HALL: No. We drew heavily, or I drew heavily, from the requirements governing the operation of the Space Shuttle. Because the Space Shuttle also has a command structure, and U.S. astronauts and others who participate in Space Shuttle activities—or used to participate—were subject to certain rules about what they could bring, and what they could do with what they brought.

You weren't supposed to be up there to take up things for Sony [Corp.] and then sell them as “flown in space, pay a premium for this particular item.” Or take stamps, coins, things like that that could easily be converted into commercial items simply for profit. That's not what we were about. So those principles already existed, then we had discussions about just how much of those and other issues would pertain to participants in the ISS Program, and who was going to be answerable for what.

JOHNSON: When you were working on the Code of Conduct, did you work with lawyers or counsel representing the other international partners when you were coming up with this?

HALL: Oh, absolutely.

JOHNSON: Do you want to talk about that? Maybe some of the differences from the different partners, and some of what you had to do, or the amount of travel you had during that time period working on that Code of Conduct.

HALL: I think I made three or four trips relating to IGA negotiations outside of the United States. Maybe three. Then several to Houston, and of course I'm based here in DC so I had several sessions here. I would say that our international partners were, by and large, very well served by their counsel. They were gifted, principled, well-motivated people, and usually if there was disagreement it had a sound basis for objections and a good opportunity for discussion.

I really do think that, particularly on issues like that and on the export control stuff, they were well served by people who had a different experience from ours—I don't want to sound particularly ethnocentric in this. We happened to have a little bit more experience with some of these principles than others had. Particularly things like export control and the issues of the on-orbit authority, the authority of the Station commander, and the Code of Conduct, because we had been doing this for a while, and these things were important to us.

While there had been export control programs in many of our partner countries, they were not nearly as comprehensive as ours. One might argue that at that particular time that was probably a good thing, for them at least. But there were real drawbacks associated with that. You had major conventional weapons going through some of our partners' economies to places that they had absolutely zero accountability over.

I'm talking about from an export control person's perspective, not from a NASA person's perspective, because it's none of my business where I am now. But where I was then, everybody else could have used a stronger system. We might have used a little more rational one than we had. Those kinds of discussions—about things that were, I'll say, a little more practiced for us, but might have been a little bit less practiced or a little bit newer to our partners—were some of the more interesting discussions.

An important thing to remember—and I'll say this principally from the export control perspective, but it applies to a lot of other things—is that the United States had not cornered the market on effective regulation, and we still haven't. The opportunity for us to learn from others who had legitimate questions about, “Why is it that you do this?” was itself of value because it allowed for us, in an export control context, to allow for more permissive transfer authorities in the International Space Station Agreement than we would otherwise have been able to get from our licensing agencies, from the State Department or Commerce Department, for some of these things.

It's because of the way that, particularly in Europe, but in other partner states, the role and the investment of private companies in space programs was at the time much more than the governments'. While it's true NASA ships about \$16 billion, \$17 billion to contractors each year, we still maintain an awful lot. What have we got 17,000 employees, something like that? These guys got nothing near that. We've got 17,000 employees, \$18 billion budget, and lots and lots of people. While we have a contractor corps that supports that of another 25,000 or so, they don't get to call the shots as much as some of the companies that were supporting our international partners did, particularly with regard to things like intellectual property. When you're talking about things like intellectual property, you very quickly get into the world of

export control because you're talking about the exchanges of technologies and what can be done with them. There was some edification that went both ways as a result of those negotiations.

JOHNSON: You mentioned earlier Title 14, the work that you did for the duty-free items. When was that? Was that during the same time period?

HALL: Yes. That was while I was still with the General Counsel's Office.

JOHNSON: Do you want to talk about that? What was the impetus for working on that and what the benefits were once you got that accomplished?

HALL: Sure. If you actually take a look at the regulation—I don't have it in front of me. I wrote the regulation, so I tried to put some of the background of how we got to it in the actual regulation itself.

I want to say this was 1995, '96, somewhere in that timeframe. It resulted from the fact that NASA had at the time three types of programs, three species of programs, that involved importing big-ticket items, hundreds-of-millions-of-dollar items, to the United States to support these three species of programs.

These three species of programs were our procurement activities, things that we're buying for our own use. They're not entering the stream of commerce, we're not reselling them. We're buying them from abroad because they're the ones that make the stuff that we want in any particular case, and we're just going to use it ourselves.

Second, there was what used to be called the Launch Services Agreements where NASA used to launch payloads for customers. You probably remember this, back in the '80s and '90s. Of course we stopped doing that, but nonetheless we had these Launch Services Agreements. Again we're importing a \$200 million—back then it was probably only about \$80 million—but expensive spacecraft, comsats [communications satellites] or whatever, from some country. Then we're launching it into space. We're not exactly selling it to anybody and it's not entering the stream of U.S. commerce.

Then the third species was International Cooperative Agreements. That's our garden-variety international space cooperation stuff where people are sending us instruments. Could be spacecraft, but could as easily be lasers or seismometers or oscilloscopes. Those, too, are not entering the stream of commerce. We're not reselling those.

The equity of not imposing what could have been essentially 100 percent duties—so if you send us an \$80 million spacecraft you're going to be paying \$80 million in duty on it—the equity of not subjecting those things to our customs duties was fairly apparent to folks. We had to spend some time with the Treasury Department and the Justice Department and other folks to get them all on board for this regulation, but we did.

It was also something that was addressed in what you may recall was the General Agreement on Tariffs and Trade, or GATT, which was the predecessor to what you now know as the World Trade Organization, or the WTO. In what was known as the Uruguay Round of the GATT negotiations that occurred in the 1990s, the United States was successful in having submitted—as part of its Harmonized Tariff Schedule of the United States, or HTSUS—an exemption for these items that were imported to support these three species of activity.

If you go to 14 CFR 1217 today, you will see those three types of activities identified there, and who it is that has the authority under each one of them to waive the duties of the United States. This forms the basis of our reciprocal demand that for items that NASA sends to other places, we likewise may not be charged duties. And if we are, then they pay them, not us.

JOHNSON: Prior to this, you mentioned in the '80s we were launching satellites and different things for other countries. Were they paying duties on those?

HALL: It appears that some were and some were not. I was brought on right at the point where they said, "Among the other things we'd like you to do, fix this." It had been a NASA policy instruction, but it had never been a regulation. Getting it to be a regulation recognized by folks like Treasury, which then owned the Customs Service, took a little bit of doing. But then everybody ultimately agreed.

I have to say it took a fair amount of negotiations just within the U.S. government to get everybody on board. It probably doesn't surprise you, but I'll make the statement anyway—the government is very reluctant to give up means of extracting income from anywhere that it can find it. Giving an agency like NASA the authority to waive import duties and fees was not something that was a first priority for anybody at Treasury or Justice or anywhere else, because we were essentially taking money out of their pocket. But we got there.

You will see, if you ever bother to read Title 19 of the Code of Federal Regulations—and I'm not suggesting that you should—but that's the title that concerns customs authorities and duties. You will be able to count maybe on one hand the kind of exemptions like NASA has in

there. There's one for the State Department for certain diplomatic activities. They are particularly stingy with these things, because what it means is less money for the U.S.

JOHNSON: I just pulled up this Title 14 while we were talking. I noticed one of the sections is *Articles brought into the United States by NASA from space* [1217.106].

HALL: That's the last one, that is the last part of that regulation I think. Yes, made perfect sense. Interestingly enough, I'm not sure exactly why we did it other than we just figured that we could.

NASA is, I think, unique among agencies, first for the breadth of our statutory authority. Our organic statute is broader than any agency's organic statute of which I'm aware, except maybe the Federal Communications Commission. They're not really an agency, they're a creature of Congress.

But nonetheless, we have just an enormously broad organic statute that allows us to do all sorts of things that other agencies cannot do, or that other agencies must seek permission from others to do. I'm talking about our authority to conclude international agreements, I'm talking about our authority to hire foreign nationals. Our authority with regard to acceptance of contributions, our contracting authority. The provisions that exist in the [National Aeronautics and] Space Act are exceptionally broad.

I don't know that there was a specific requirement at the time that we wrote this regulation that we needed to have a statement that if we're bringing something back from space, from wherever it came, it's not subject to entry. That means we don't have to file with customs that we've entered this into the U.S. But boy, I'll tell you, it sure turned out to be prescient that we got it, because we started bringing stuff in from ISS and Shuttle-Mir and other activities—or

legacy of Shuttle-Mir. Things that we were bringing down on Shuttle that came from other countries originally, and not being subject to that requirement for entry was a very nice thing to have.

It didn't mean that we didn't have to comply with things like biohazard stuff, because we brought back a lot of animal things and beetles and soil stuff that could have been hazardous to our agriculture here in the U.S. So we had to get things cleared by what is known as the Animal and Plant Health Inspection Service, or APHIS, over at the Department of Agriculture. We had to get a permit from them for which we pay, I don't know, like \$100 a year.

But what we don't have to do, is we don't have to go through formal entry procedures for stuff that we bring back from space. That has proved to be a big money saver.

JOHNSON: I can't imagine how ISS could have operated without something like this. We wouldn't have the money.

HALL: No, we don't. We don't have appropriations for that kind of stuff anyway. Why is it that we would be paying so much money to other agencies for services not really rendered? It doesn't make a lot of sense. The transfer of money itself between agencies costs money. If you can avoid it, avoid it.

JOHNSON: When you were talking about the Code of Conduct, it made me think of something. I don't know if you had anything to do with it or not—you'd already moved out of that area. I think you'd moved into the position as Manager for International Technology Transfer Policy

and Export Control by that time. But in 2001, again because of some of their financial difficulties, the Russians wanted to launch Dennis [A.] Tito [space tourist] to the ISS.

HALL: And they did.

JOHNSON: Yes. But there was a lot of pushback from NASA. How did that relate, or did it at all, to the Code of Conduct? Was that used as maybe one of the reasons? I know training had a lot to do with it. He wasn't trained as an astronaut, but legally what were the concerns NASA had?

HALL: First of all, I will say I was not an intimate participant in the Tito experience. I have an understanding of why there was some concern with the whole spaceflight participant idea, not just him in particular. Different way of doing business, all this other sort of stuff. But I'm probably not the best apologist for those reasons, so I really won't speak to it.

What I will say is that as a spaceflight participant he was subject to the International Space Station Code of Conduct and had to formalize his assent to that. That's probably all I should say.

JOHNSON: Okay. Around 2000, that's when you moved to that other position where you were actually the Manager for that area. Do you want to talk about that and why you took that position? Was that just a natural move for you?

HALL: While I would like to say that it was some more respectable reason for making the move, I think that I was largely interested in becoming a member of the Senior Executive Service [SES]. That position, NASA Export Control Administrator, was such a position. I would say in addition to that—not to be overly smug, but I was probably the best qualified person for it, having done the stuff and helped create the program at NASA in the prior years. It was a natural evolution from that perspective.

But I was also very interested in becoming an SES member, and unfortunately the opportunities in the Office of the General Counsel for an SES slot were not at that time—nor are they today—as frequently available as other offices may have. I really did love being a lawyer for NASA. I was working with top-drawer lawyers both here and in other agencies and in the international partners, and I loved my clients, whose ranks I was now to join, and I have always liked being a lawyer.

So I was regretful about having to leave the Office of the General Counsel for that reason, but it was a career advancement opportunity. Again, it was to a position that needed somebody to fill it, and I recognized that I was probably the ideal person for it at the time. We have been very fortunate, I will say, that subsequently we have been able to find some truly exceptional people for that position who have gone on to similarly great careers in other agencies, and I will tell you that since we created the NASA Export Control Program we've almost uniformly been led by good people there.

JOHNSON: Let's talk about that time period. Around 2000, the Iran Nonproliferation Act [INA]—can you talk about that and how that affected the area where you were working at that

point and some of the issues around that? And how, like anything else, it affects the ability for NASA to work with some of the partners?

HALL: Yes. Of course the INA itself is nothing new. It's been around for decades, and it was around for decades prior to the INA that was amended to impose particular restrictions on our ability to do human spaceflight-related cooperation with the Russians.

But owing to the fact that the administration did not make the certifications required in order for the provisions to be waived, there were definitely certain limitations on our ability to contract with the Russians or even to cooperate with them in certain aspects. Fortunately, for the initial years when the INA provisions regarding our work with Russia on space stuff—during those initial impact years, we were able to construe certain provisions of the Act to allow for the things that we absolutely had to do for safe operation of the Space Station. Then subsequently, as you're more aware than I, there have been extensions of the authorities that we have there, and a little bit of clarification with regard to what exactly is covered there.

There are other restrictions now regarding Russia about which I cannot go into detail owing to the particular character of these restrictions, but they are restrictions about which there is at least awareness. This is all of course in response to the annexation of Crimea and follows from sanctions that are well known and other things. Those are at least as relevant, if not more relevant, I think, than the INA provisions nowadays.

What existed back then we were able to—I don't want to use words like workaround, because workaround suggests that we were not in compliance. That would be an incorrect interpretation. We were in compliance with the INA, and we used the authorities of the INA to ensure the continuous safe operation of the International Space Station. That's all we did.

JOHNSON: Part of your position title was Manager for International Technology Transfer Policy. Do you want to talk about tech [technology] transfer for a few minutes, and some of the issues you had to deal with as far as developing policy at that point?

HALL: Yes. A lot of that of course was essentially export control policy and nonproliferation policy, and the development of those policies through the interagency process and applying them then to NASA's international activities. It's a little more elaborate way of saying export control and nonproliferation policy.

NASA is not a regulatory agency. We don't direct the development of nonproliferation policy or export control policy or international trade sanctions. There are agencies whose whole existence is directed to that purpose. But we do participate, and we do inform the process, and we do let people know when they're thinking about policies that could have particularly unhelpful effects on the U.S. civil space program.

By and large, NASA's reputation in the interagency community is really quite good, notwithstanding my own leadership role in it for many years. NASA is regarded as a pretty sound participant in the process, and our views are respected and, as best they can be, accommodated. Even though, as I said, we're not responsible for making these rules or enforcing them.

Those activities that had to do with international tech transfer policy really were nonproliferation and export control policies that were being developed in the United States at that particular time. You've mentioned some of them in the form of policies towards Iran, the evolution of policies with regard to Russia—first in a liberalizing context and then not so

much—the evolution of policies regarding China following the Tiananmen Square massacre in June of 1989, which had a rolling effect that ultimately resulted in 1999 in the National Defense Authorization Act.

There was a report called the Cox Committee report [Report of the Select Committee on U.S. National Security and Military/Commercial Concerns with the People's Republic of China, chaired by C. Christopher Cox] that involved—I think it was Loral's [Loral Space & Communications, Inc.] failed launch on a Chinese Long March [rocket], and some of the allegations regarding transfers of launch vehicle-related technology to the Chinese during the course of the investigation for that. That resulted in a rollback of export control rules to some degree, and also highlighted the fact that all spacecraft except for the ISS were subject to the State Department's ITAR jurisdiction. Which of course they always had been. It's just people weren't aware of it, particularly in the university community, and they found themselves getting in trouble.

It's those policy discussions. The evolution of policies regarding technology transfer and nonproliferation with the rest of the world.

JOHNSON: Those export control policies do seem to change. I was reading, and I can't remember right now what year it was, but it was testimony before Congress and you actually spoke at that one. It was different congresspeople talking about the competitiveness of NASA as an aerospace agency in the world, and the small businesses and contractors that rely on their ability to do this work, and universities with international scientists and engineers.

HALL: How did you get ahold of that?

JOHNSON: It was on the web.

HALL: Really. I remember that well.

JOHNSON: It's interesting to me, NASA being formed for peaceful uses of outer space, but to continue that you have to keep renegotiating the ability to work with all these different countries and get through all these different regulations.

HALL: The focus of that, as you noted, was competitiveness. That was a time when, as I mentioned, the difficult bureaucratic environment that existed still at that time, that was 2008. It was before the Obama administration did the export control reform, but not much before. Before the election. He gets elected in 2008, and 2009 he says export control reform. Even that late—so even in 2008, after we had been bitching about stuff since 1993—even then the issue of competitiveness had so overtaken things.

It was so much less about genuine threats to our security from a national security perspective, and instead genuine threats to our economic security. We had lost market share in satellite exports by something like—we went from 70-something percent down to 25 percent of the market.

Our companies—I say we, because it is interesting that NASA should have to be the advocate for all of this—but the fact of the matter was it was our companies supporting our programs who couldn't get licenses for the stuff that they needed to do for us. Or couldn't get

them in a timely manner, or they came with ridiculous or extensive restrictions that essentially made the authority worthless, or worth a lot less.

We became an advocate for export control reform principally on the basis of the effectiveness of our programs, but also on the competitiveness of the space industrial base upon which we relied. In the absence of a robust, healthy space industrial base, we would not be able to do the things that Congress and the administration were telling us to go and do.

It's interesting that you caught that as late as 2008, which is a good almost 20 years after we started bleating about this stuff in the early '90s.

JOHNSON: It is interesting. In the research I kept finding other instances throughout the years. These things were still in discussion, or you were still fighting against it, or NASA needed to have the ability to work to do the things that the President is telling you to do.

HALL: It wasn't until the Obama administration came in that anybody really got serious about it, and the President actually put his shoulder into it and he created the Export Control Reform Initiative and told people to get stuff done. The things that he outlined in his Presidential Policy Directive on this have still not been completed, but enough of them have that things are at least better. That's something I wasn't able to say for 20 years. There is that.

JOHNSON: September 11, 2001—of course things changed a lot for this country. How did the laws and policies that followed that event affect the division that you were working in? Was there any effect? It seems like it would add another layer of difficulty.

HALL: I'll tell you what did happen. One of the things that did happen, and for which we were responsible here in this Office, was the strengthening of NASA's Foreign Visitor Access Program. That surely was, I think, linked to the activities of September 11, and also to various high-visibility cases where people not necessarily involved with NASA, but at other U.S. government facilities, had allegedly shared nuclear secrets or multiple independent reentry vehicle technology secrets with the Chinese, for example.

Big focus on strengthening the ways that we managed foreign national access to our facilities. Because you have to remember, we host about 10,000 foreign nationals a year at our facilities. Each one requires some level of vetting. "Why are they coming? Where are they from? What will they have access to? Are they on a particular blacklist?" NASA's Foreign National Access Management Program has become greatly strengthened, I'll say more complicated, too, than it had been previously. That first occurred under our leadership here, under my leadership I guess. That's the one thing that I'll point to.

First of all, the immediate effects of September 11 were not, from a technology transfer perspective, all that connected. Because you were talking about aviation and commercial aviation, essentially turning a [Boeing] 747 [aircraft] into a cruise missile. There was not a whole lot of technology transfer restriction that you can apply to something like that if somebody wants to do something like that. It's all in the public domain.

Could we have done a better job, for example—we the U.S. government—of screening the people to whom we were teaching these skills? Evidently yes. But was the knowledge that they were being provided something that they could not have obtained otherwise? Definitely not. From a tech transfer and export control policy perspective, there wasn't that much of a nexus.

The greater concern was “They’ve shown a willingness to do this, what else might they do, and where do we need to focus our energies with regard to things like export control and nonproliferation? What are the things we really absolutely cannot allow these guys to get their hands on?” For counterterrorism purposes, those discussions I think were more impacted than anything that we would do in the immediate term with regard to publicly available information.

JOHNSON: How about the [Space Shuttle] *Columbia* [STS-107] accident? Did that have any effect at all on any of the work?

HALL: Huge, yes. I was responsible. *Columbia* was 2003 in February, right?

JOHNSON: Right.

HALL: By that time I don’t think I was the Director of the Office yet. There was a period of time where I was both the Export Control Administrator and the Director until I was able to hire somebody.

When *Columbia* happened there of course were the investigation panels, and the [NASA] Administrator [Sean O’Keefe] was unambiguously clear that he did not want NASA to be seen as if it was shielding information from the public or from the accident investigation panels [*Columbia* Accident Investigation Board].

There was an awful lot of Space Shuttle design and operations information for which I personally authorized the public release. I’m talking boxes of stuff, all of which I went through with my staff. I would not have done it but for the fact that, “We were going to be transparent,

and we're going to give them whatever it is they need, and we're going to let the public have access to whatever it is the investigators need access to, in every possible instance that we can."

So we did.

I don't think that it had an impact to our national security. In fact I'm fairly certain that I've seen no evidence of that, but it was nonetheless a sensitive call to make. I was the one responsible. If it was the wrong call I certainly would not be here talking to you. It wasn't my idea, but I was responsible. Obviously wasn't my idea, because I wouldn't have come up with it. But I was the one that made the determination to go ahead and let these things go.

JOHNSON: This you said was mainly the Shuttle design and—

HALL: Operations, yes. Operations, and definitely there was some design information in there.

JOHNSON: Where did these boxes of information come from that you went through?

HALL: They came from three places. I think they came from what's now HEO, Human Exploration and Operations Mission Directorate, which at the time was the Space Operations Mission Directorate. Came from the Shuttle Program Office. I think we got a bunch of stuff from JSC, too. KSC, JSC, and the programs up here.

JOHNSON: By releasing that information, did you just release it for public consumption? Or was it something that if someone requested something then it was open and they could get it?

HALL: I think the latter. I don't think the stuff wound up online, but it was provided to the accident investigators, the review boards. I signed papers that cleared it for public release. Having done that, it's important to make the distinction that you just made.

Under the export control rules, something is in the public domain if it's been authorized by the relevant government agency for public release. It does not require that it actually be published. All it needs in order to be in the public domain is that somebody has said that it can be. If that's documented, and it is in the case of *Columbia*, then it is publicly available and the export control laws do not apply.

JOHNSON: That's interesting. I hadn't heard that before.

HALL: If you want to look it up it's in Title 22 of the Code of Federal Regulations, Section 125.4(b)(13).

JOHNSON: You still remember all these numbers.

HALL: I pushed out useful knowledge to remember these things. I'm worried about what it is that I forgot that is somehow occupied by these citations now.

JOHNSON: I do understand that, useless information that you can't forget. Let's talk about the announcement in 2004, after *Columbia*, for the Vision for Space Exploration when President [George W.] Bush announced that the Shuttle was going to close out but ISS would be built, and going back to Moon and Mars. Did that Vision have any effect on your area, too? Were there

different things that you had to start working toward? I don't know if you were Director at that point.

HALL: By that time I was the Director of the Office. As the Director, I was the lead for NASA's interagency relations with the rest of the government, including in policy stuff. Just to be clear, the Vision for Space Exploration was not your garden-variety National Space Policy exercise. This was something that did not involve the routine kind of staff-level negotiations and interactions with all of the affected agencies in the way that the President's National Space Policy did; or the National Space Transportation Policy; or the Commercial Remote Sensing Policy; or the [Space-Based] Position, Navigation, and Timing Policy; or those other space-related policies which were much more of an interagency communal development effort led by the National Security Council and the Office of Science and Technology Policy at the White House.

The Vision for Space Exploration was not that. People like me, I wouldn't even consider myself a bit player in that. I was told what it will be and then that was it. It was my job to go out and work with the other agencies to make it happen. That is one policy that was different in its formulation from all the others.

JOHNSON: That is interesting.

HALL: I don't know who to tell you to go to, who you see about that, because I don't think anybody that I would send you to would appreciate me sending you to them.

JOHNSON: Let's talk about once you became Director and some of the work you did. Maybe you can explain a little bit about your capacity. I'm reading a general description. It says you oversaw administration of the NASA Export Control Program, coordination, Agency-level policy interactions with U.S. executive branch departments and agencies, as well as participation in the United Nations activities and programs. Talk about the scope of that position, and a general description maybe here in the next 10 or 15 minutes while we still have enough time today.

HALL: I'd be happy to do that. Running the Export Control Program was a big part of the job, but then it largely became overseeing it, because as I said we had some very good people who followed me into that position. Unfortunately it went from an SES slot to a [General Schedule (GS)-]15 slot, because I had been doing both jobs for a sufficiently long time I guess that they figured "Well, we got one SES who's doing two SESs' jobs. Let's make one of his jobs a 15 job, and take an SES back and give it to the Administrator." I felt badly about that because it meant that I wasn't able to offer the same high-visibility and leadership opportunity to the persons coming after me. Nonetheless, we are where we are.

But we had very good people that were doing the program. Continued to have the efforts all the way from 2004 until just a couple years ago, trying to get improvements to the export control rules to which we were subject. Developing very, very good productive relations with the licensing agencies. People whom we were asking an awful lot of continued to take our calls.

That was heartening to me because we were not an uncritical customer. Yet these guys were professionals, and recognized the significance of what it was that we were about for the

nation. That was good. I would call that a period of very good interagency cooperation on export control.

Likewise, there were an awful lot of space policies that came out from 2003 all the way to—when did we do space transportation—2015 I guess, I can't remember. I was the principal NASA guy for those policy development exercises for the National Space Policies, which had first started when Clinton was President, and then went through the Bush presidency and the Obama presidency for his. A very big part of what I was doing was space policies, whether Space Transportation Policy, Remote Sensing Policy, or other space-related policies. That's something we can talk about in greater detail subsequently.

For the UN [United Nations] stuff, it's part of my portfolio, and I'm certainly conversant in it. But the actual NASA footprint that we have at both the United Nations Committee on Peaceful Uses of Outer Space and one of its principal subcommittees on science and technology, as well as all other UN offices, really has been well managed by two people who worked for me serially. One of them has retired, the other was my Deputy. She's now my replacement, she's now the Director. I really have to give the most credit to those two people for really enhancing the value of NASA's participation in these UN activities.

We lead the U.S. government at the Scientific and Technical Subcommittee. We do that very well as a result of the leadership of these folks. Like I said, I'm happy to talk about UN in general and am able to do so. But when we do talk about that I'll probably say, "Look, if you really want a good sense of what NASA does with the UN and how important it is, I'm going to let you talk to these people."

JOHNSON: Okay. If you'd like we can go ahead and stop.

HALL: Okay, that sounds good.

JOHNSON: All right, thank you so much.

HALL: Thank you, Sandra, appreciate it.

[End of interview]