NASA JOHNSON SPACE CENTER ORAL HISTORY PROJECT
COMMERCIAL CREW & CARGO PROGRAM OFFICE
ORAL HISTORY TRANSCRIPT

LISA P. PRICE
INTERVIEWED BY REBECCA HACKLER
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HACKLER: Today is May 14, 2013. This oral history interview is being conducted with Lisa Price at the NASA Johnson Space Center in Houston, Texas, for the Commercial Crew & Cargo Program Office History Project. Interviewer is Rebecca Hackler, assisted by Rebecca Wright. We'd like to begin by asking you to share with us briefly your experience with NASA and budgets, and how you first became involved in the COTS [Commercial Orbital Transportation Services] Program.

PRICE: I came to the Johnson Space Center as a Presidential Management Intern in 1990, and spent two years working in various offices, including the policy office, procurement, resources, supporting engineering, as well as the Moon and Mars program [Space Exploration Initiative]. After that two-year internship was up, I went back to the Moon and Mars program. I've worked on a lot of different programs, and I've supported all of the various technical organizations and programs at the Johnson Space Center.

I came to the COTS office as a team lead over the original analyst, and worked with her for a few months. Then she left, and I actually ended up in that office serving as a budget analyst from about August 2006 through 2011. When I came on board we had two partners, SpaceX [Space Exploration Technologies Corp.] and RpK [Rocketplane Kistler]. Shortly after that, RpK was terminated as a partner. We recompeted, and selected Orbital Sciences Corporation.

HACKLER: What were your thoughts when you heard about this new program to try to partner with commercial companies in a different way than traditional NASA procurements? What sorts of challenges did you face in the budget environment to make that possible?

PRICE: Originally I think the idea came about when we talked about cancelling the Space Shuttle Program. In its original manifestation, the idea was to turn the responsibility for operating the Shuttle over to a private entity, but I don't think that ever really occurred. Then when I heard about the COTS program—Mike [Michael D.] Griffin, the [NASA] Administrator, decided to set aside $500 million as seed money to get the commercial activity going, and to get commercial entities involved in trying to build the capability to take cargo to the [International] Space Station as a replacement for Shuttle delivery of cargo.

I thought it was really exciting. I think it is a way that the Agency will have to go in order to do other things in the future, in order to go back to the Moon or to Mars. I think we have to turn that type of delivery capability over to the commercial partners. It was a novel idea. There was some resistance originally, inside the Agency as well as from traditional NASA contract partners. Once the activity began to prove that it might be successful, I think it became more and more understood within the community that was the way we would go, and that was the way that we would have to go in order to continue to be successful in supplying our U.S. needs on board the Space Station.

From a budget perspective, honestly, the challenges were operating and being willing to operate with a different mindset. It was not a traditional cost-plus fee type arrangement. It was milestone based. We have some firm-fixed-price milestone-based contracts, but this was not a

contract. It was a partnership agreement where the cost was shared. That was a relatively new concept for me to be implementing.

I had worked with traditional NASA contracts and grants. Within the partnerships, we tried to keep in mind that they were operating like a free enterprise and they needed cash flow. The milestones were based on a business plan more so than the actual value of the milestone. We didn't try to calculate the value of the milestone or what the cost of the milestone was. It was really important for us, once a milestone had been accomplished, to appropriately document the success of the milestone. There were criteria associated with each milestone that had to be met in order to pay the milestone.

I worked with the Financial Management Division at JSC, and procurement, to develop a workflow process for paying the invoices quickly. A traditional invoice might be a net 30 days, or net 15 days, where we receive the invoice and we pay the invoice within 30 days or 15 days based on the contract language. If I received an invoice for a traditional contract that had a net 30, and I authorized payment on that, our Financial Management Division would hold the payment until the 29th or 30th day.

Our goal in the COTS program was, once the milestone had been successfully completed, to get that money to the partners as quickly as we could so that they could continue to work without interrupting their efficiency. We were able to work a process, including once the payment transactions moved from JSC to NSSC [NASA Shared Services Center] processing. Typically we got the money in [the partner's] bank account within three days of receipt of an approval of the invoice and the milestone.

That was a big success, and our partners always expressed their appreciation. They were also really surprised that we could get the money to them that quickly. I think their experience

with the government was that it took a little longer to get that payment. We were very successful in turning that around quickly and getting the money back in the account for them to keep working.

HACKLER: This might just be part of my ignorance about the role of what a budget person does on a program, but can you describe how you worked with the COTS office and their budget needs in addition to delivering payments?

PRICE: It's the responsibility of the budget analyst working with the program or the project to come up with a budget for everything that needs to be a part of the program. Before I came on board, they had made the decision that most of the $500 million would go to the partners. Originally, 97 percent of the $500 million was to go to the partners. That left three percent to have a staff of civil servants—to pay for their travel, to have a safety person, a budget person, a procurement person working for the program.

The COTS office at the largest point was 13 civil servants, which is really small. It was a very lean team, and we had a couple of technical people who supported the partners full time. They were like a Project Manager and a Deputy Project Manager [Project Executive and Assistant Project Executive]. I worked with them to determine how many other people and what kind of support they needed, and budgeted for that based on historical rates depending on what center was involved.

We used [NASA] Marshall [Space Flight Center, Huntsville, Alabama] engineering, because at the time JSC engineering was heavily involved with Shuttle, Station, and Constellation. We went to Marshall for most of our engineering support. We costed out the

staffing that we needed, the travel that we needed. Then we had a very small amount of program

support from a contractor.

HACKLER: How does that 97 percent figure compare to the budget in traditional programs?

PRICE: It's much lower than in a traditional program. In a traditional program, you would have

hundreds of civil servants supporting the program. You would have more of a support contractor

staff, and you would have dedicated engineering staff providing support to the program. The

COTS program chose to only buy engineering support as needed, and they were able to get part-

time of maybe 100 to 150 people, maybe an hour here and there, maybe a week when we had a

major review, if we needed it. Engineering support from that perspective was much lower than

traditional. And we were there to help the partners, not tell them how to do it.

HACKLER: To clarify, was that engineering support the COTS Advisory Team?

PRICE: Yes, that's the COTS Advisory Team.

HACKLER: You said that by the time you became involved in the COTS program, they had

already selected the first two commercial partners. Did you have any role in the termination of

RpK, when their Space Act Agreement was terminated [in October 2007]?

PRICE: I was in the program office at the time that RpK was terminated, and I was on the Source

Evaluation Board [Participant Evaluation Panel] for the new partner.

HACKLER: Can you talk about your experience?   As much as you can share, because we understand that a lot is proprietary.

PRICE: RpK had difficulty raising money in the private sector, and had essentially stopped work. The program had a tough decision to make, as to whether or not to continue to partner with them and decided that it was not in the best interest of the government to continue that partnership.

HACKLER: Did you have any input in those discussions?

PRICE: Only from a budget perspective, as far as what we had spent to date, and the remaining milestones. Then in the recompetition, I was on the evaluation board for the selection of the new partner.

HACKLER: What kind of lessons learned from RpK's termination did you apply to your role in the selection of the next partner?

PRICE: I think it's really important that these agreements had financial milestones as well as technical milestones. I think the board as a whole, and the business team on the selection panel, looked very closely at the business model of the potential partners and made sure that business model made sense. We also had an outside consultant who looked at those as well [Alan Marty], and the person who led the business team was Dennis [A.] Stone. Dennis had been through the first partnership selection and was part of the program from the beginning. He had a good

handle on what the business model should look like, and whether or not they would be able to close the business model.

HACKLER: As the [Resource] Analyst, did you also play a part in how some of the milestones were negotiated in the new Space Act Agreement?

PRICE: No, I did not. At one point in time, Congress gave us additional funding. I was involved in the augmentation discussions, regarding the augmentation milestones. Not in the negotiations between the partner and the program office.

HACKLER: Can you share a little bit more about the augmentation and the negotiation of those milestones?

PRICE: The partners proposed augmentation milestones that would reduce risk to the program and to their performance in their achievement of their vehicle demo [demonstration]. There was a lot of back and forth between the partners and the project managers within the program office, about what those milestones should be and what the closure criteria for success should be. They should be milestones that reduce risk, which incorporated additional tests.

In the case of Orbital, it incorporated an additional test flight. With regards to SpaceX, there was additional testing. They were further along because they had been operating for a year or more longer than Orbital, but there were still some additional test activities that mitigated potential risk.

HACKLER: How has your work in procurement evolved as a result of your work with the COTS program, and that different way of doing business between private and public enterprise?

PRICE: I'm on the budget side, not the procurement side.

HACKLER: I'm sorry, excuse me.

PRICE: That's okay. I do occasionally get involved with procurement activities.

I think it's helped me to see that there are other approaches that can be very successful, and I am a big advocate for the COTS program and the COTS model. I think that Alan [J.] Lindenmoyer [Commercial Crew and Cargo Program Manager] has been extremely successful in helping the partners to accomplish the goals that they set. Coming to the Space Station Program, it's nice to the see the fruition of that work, and to see SpaceX delivering cargo.

It is a very different model. It's a very different mindset as to how we accomplish things. Typically on a contract, we [NASA] are writing the requirements and telling the contractor how to do what we want them to do. In the COTS program, its model is to tell them what we need, and let them go figure out how to deliver it. From a financial perspective, it has been much cheaper to partner with SpaceX and Orbital to deliver cargo than it would have been under a traditional NASA program.

HACKLER: You talked about the lean staff in the COTS office. What are some of the other areas where you saw major savings in the budget?

PRICE: The size of the workforce drives the cost. With the program office being held to a very lean staff, that reduced the cost on the government side and we were able to give more of the money to the partners. When we recompeted for the new partner and Orbital was selected, we did take part of the remaining funding and increase the percentage of funding that we set aside for the program office. Again, it was pretty minor. I think at that point in time, we increased it from three percent to five percent.

The reason we did that was that we were slipping a year or more down the road. We were bringing on board a new partner, and we realized that we would have to extend beyond the original window that we expected the program to run, and we would have to keep those civil servants engaged and employed on the program. We would have to extend the travel and the program support. We did increase that slightly.

HACKLER: You also worked with some of the other folks that were involved, procurement and legal, which formed a support team to make COTS possible.

PRICE: We had a legal representative and a procurement representative who were integral to the program. There was a dedicated person or persons who were involved. We were all involved in the weekly staff meetings with Alan. It was a very lean team, and everybody was at the table in the weekly meetings with the program manager. You can do that when you have a small team. You can't do that when you have a team of 300, 400, or more.

Everybody was knowledgeable about what was important to the program, what things were going on in the program, what issues we might be dealing with. I think that's really

important, to have that very flat hierarchical structure, or lack of hierarchy within a program office that size, if you're going to do something different.

HACKLER: I think I'd like to ask Rebecca Wright if she has any questions she'd like to follow up on.

WRIGHT: I have a question about the augmentation. You said Congress gave that money. It's very rare that you hear of programs getting more money. Can you share the background of how that money actually made it into the program office here?

PRICE: I'm not sure what the driver was behind the Congressional appropriation, whether there was lobbying on behalf of the partners. It was not something that the program originally asked for, but when we were offered it, we felt like the best use of those funds was to reduce the risk. There was actually language written into the appropriation bill specifically directing that additional funding to the partners. I think it has proven to be very successful.

WRIGHT: It must have been a surprise as a budget person to get more money to deal with. Usually people are ready to take it away.

PRICE: It was quite a surprise to have more funding offered to you, without having to go and fight for it and defend it. That's not something that happens frequently.

WRIGHT: You made a comment about the payments for the milestones, getting the money to them so quickly. That the process changed from JSC to the NSSC, is that right?

PRICE: The NSSC, that's right. Johnson Space Center's Financial Management Division is part of the Office of the Chief Financial Officer. The Financial Management Division used to have an accounts payable group. I worked very closely with the accounts payable group and procurement so that when we received an invoice and the milestone, there was actually a letter signed by the program manager saying that the milestone had been accomplished. We would get the partner invoice and that letter, and those were necessary before we could make a payment.

We actually laid out a flow diagram, ran it through all the people who were involved in the process, and worked that very closely with the Financial Management Division to get the actual payment. We knew when the U.S. Treasury cutoff was, so the process—we have approval to pay the milestone, we have the invoice, we approve the invoice, we run that through procurement and also through to the Financial Management Division.

The Financial Management Division would work closely with us on any deadlines with regards to payment. We didn't like to pay near the end of the month because there's a cutoff. Treasury has a day or two where they don't actually pay bills. We would pre-coordinate all of that, know when those cutoff times were, and were able to very quickly get that funding actually put in the bank account of the partner.

That accounts payable function moved to the NASA Shared Services Center. We also worked with them and showed them our process, and gave them a copy of our process diagram. JSC Financial Management Division continued to partner between our office and NSSC to make sure that payment continued to happen that quickly. It was very important, again, to get that

money into the hands of the partners so that they could continue to work. We could not have done it without that partnership of budget, financial management, the program office, procurement, and the relationship between the Financial Management Division and the NASA Shared Services Center.

WRIGHT: You actually laid some new groundwork for how to do these types of business transactions for budgets in the future, because you put these new pieces together.

PRICE: Right, we actually laid out the flow diagram and got everybody to sign off on it. They agreed that this was the way that we were going to operate, and that we could successfully do that transaction in three days. We committed to the partners that we would turn that payment around in a three-day period.

WRIGHT: How long did that process take for you to get all these people to buy in on this? Again, it's a new way of financing these partners, and so we all know how slow sometimes bureaucracy works.

PRICE: It didn't take very long, because again, it was limited to a very small team of people. There were one or two procurement people that we were working with, and then Connie [Carol J.] McDonald and [T.] Anita Lile in the Financial Management Division. I preferred that face-to-face interaction, so I would actually walk over and communicate to them, and work with them directly. I'd actually walk through and take the invoice over to them. That's part of the transactional activity that helps speed up the process. It takes a little human care and feeding,

rather than sticking it in an interoffice envelope and letting it take a few days to get over there. We would not have been successful.

WRIGHT: How were they on that end? Were they pretty receptive of, "Now we have to change these things and make this work"?

PRICE: That group has always been awesome to work with, and they were very receptive to turning it around quickly. The procurement side of the house had to review all of the documentation from the milestone review and make sure that they were in agreement that the milestone had been met before they could sign off on the approval. They were very receptive to working that, and making an effort to get it done quickly. We were able to expedite that process.

I also worked with Commercial Crew [Program], and I think they took a little different approach. They were a little more nervous about paying the partners. That occurs out of [NASA] Kennedy [Space Center, Florida], and they gave themselves a little more leeway than three days. It worked for us, because we were a small team, and we were able to work together.

WRIGHT: Do you think that the pieces that you put in place for this workflow process can be adapted to more things that you see in the future?

PRICE: It depends on what you're trying to adapt it to. For this type of project, I think it was very successful, where you were paying a milestone. It might be different when you're paying invoices. We tend to pay invoices quickly too, if the contract states that. It's based on the terms of the contract, and those get negotiated for each contract.

Myself and the person who was taking that job over for me went down to Kennedy when the Kennedy team was named as the lead for Commercial Crew. We gave them a briefing of some lessons learned, and shared with them what our processes were, and how quickly we turned around money back to the partners. Of course, they had to find out what was best for them, for the Commercial Crew Program. We were able to work very closely with them and share with them. Our team, myself and Stan [Stanley E.] Whalen, who was taking over for me at the time, were also working Commercial Crew here at JSC. The Commercial Crew [Program] Manager is at Kennedy and the Deputy's at JSC, so we were also the budget analysts assigned to that.

Alan Lindenmoyer and I actually developed the first budget for the Commercial Crew Program. The first two budget years, where we did a submission, was before the Commercial Crew Program was officially named and formed. We prepared the original budget submissions for the first two years, and we worked very closely with Kennedy to make sure that they understood all of our assumptions, our staffing levels, our assumptions with regards to travel and engineering support, as well as program office support. I think we did a really good job of handing off that information and sharing information with Kennedy, and establishing a really good relationship.

Then the office here, the budget analysts continue to provide support directly to the Commercial Crew Program. Things that they [KSC] may not have had the staffing to do at the time, we volunteered to do for them, and provide to the Commercial Crew Program. We were able to do that because we were used to doing it on the commercial cargo side. It really helped to bridge that new program and provide lessons learned to them. I think as a result, they were able to start up quickly with no real issues from a budget perspective, other than funding from Congress.

WRIGHT: That's a chapter in itself, isn't it? I don't think we realize—we know budgets support all of the efforts, but as a budget analyst, you find yourself in a lot of different environments. Like you said, now you're on the International Space Station area. Now it's pulled together. When you said you saw that the work of the COTS program had come to fruition, can you share really how that worked? Are you involved in that budget as well?

PRICE: I'm the Resources Manager for the Space Station Program, so I see the entire budget. I don't get down into the details as if I were actually doing the budget execution like I did on the COTS side. I've also supported all of the other organizations at JSC—Mission Operations [Directorate], Space and Life Sciences, Safety and Mission Assurance, and other organizations that are key to making the Station activity work as efficiently as it does. I have an understanding of their budget, what their needs are, and what their issues, concerns, and worries are.

I was in the program office from '93, on the transition team from Space Station Freedom to Space Station Alpha to International Space Station. Then from '95 through '99, I was the lead for [The] Boeing [Company] flight hardware contract for the International Space Station. I got to see all of the hardware built and work that budget. I have a good understanding of the history of the International Space Station Program, and to see all of the performing orgs [organizations] across the Johnson Space Center and what their needs are, and how they affect the program.

To see COTS and to then come back and see it all coming together, really, this far in my career, gives me a good understanding. It's nice to see how it all ties together. When I was here before, I was focused only on the U.S. flight hardware.

WRIGHT: Then a whole aspect you never even thought of when you first started, a commercial resupply service.

PRICE: I never thought about a commercial resupply service back in the early 1990s. It's very exciting to see that we have a U.S. commercial provider delivering cargo to the International Space Station. That's really exciting to see that.

WRIGHT: It's a good thing you hung around all these years.

PRICE: Yes, and I'm excited to hopefully see, during my career, the commercial delivery of United States astronauts to the International Space Station. I think that's not far down the road.

WRIGHT: I think that's what they're anticipating.

HACKLER: Since you're looking at all of this now from the broader International Space Station perspective—one of the goals for the COTS is to provide more cost effective transportation of cargo. What kind of cost savings have you seen? How does the budget compare, using these commercial providers as opposed to any of the International Partner options or Shuttle?

PRICE: The Shuttle had a different capability. The Shuttle was capable of delivering very large pieces of hardware that no other vehicle could deliver, so we flew Shuttle flights to the Space Station and delivered all of the large hardware components as well as pieces that would be necessary for future use, what they call Orbital Replacement Units [ORUs] of hardware. We

pre-positioned those spare parts onboard the Space Station while we had the Shuttle flying. The cargo delivered by the International Partners, they won't have the same volume capability that the Shuttle had, but for the things that need to be delivered they certainly have the capability.

SpaceX also has the capability to return research, and to return smaller ORUs to the ground to be evaluated and tested to see if there was a failure, what caused the failure, and how to fix it. Certainly not the capability that the Shuttle had. From a cost perspective, I think they are much cheaper than a Shuttle flight. The information is competition sensitive, so my office is really careful that we don't put out documents that would show you, for example, exactly how much a flight costs. It erodes the competition from one partner to another and shares information that should be sensitive outside of that partner office. We are very careful not to put numbers on a document that would allow somebody to calculate that cost per flight.

HACKLER: Right. Well thank you very much for sharing your perspective with us. It's a completely different side of the COTS story. Before we close for today, I just wanted to give you the opportunity to share any final thoughts or reflections about your work on the COTS program.

PRICE: I think it's probably one of the highlights of my career to have been able to support the COTS program, and I think that Alan Lindenmoyer and his team have done a wonderful job. I think they were very dedicated. That team stayed together for the entire program, and are still together today to finalize the Orbital Sciences Corporation activity and demo flight, which will hopefully occur later this year. Orbital had their test flight this spring, and hopefully will have their demo flight later this calendar year.

HACKLER: Thank you very much.

PRICE: Thank you. I appreciate the opportunity.

[End of interview]