# Preflight Interview: Rick Mastracchio

*The STS-106 Crew Interviews with Rick Mastracchio, Mission Specialist 2.*

*Rick, this is your first shuttle mission as a member of the flight crew, but you've been working in the space program for more than a dozen years. Did you always want to be an astronaut, or did the desire to be an astronaut grow out but coming to work for NASA and being a flight controller?*

I can't say that I always wanted to be an astronaut, but I know that, as a young boy I was always interested in math and science, especially math and science that had something to do with exploration and the space program. I also wanted to be a pilot; I was always interested in flying airplanes. And then when I graduated from college, I realized that the engineering position I had was, was one that was going to challenge me mentally - I also wanted a job that was going to challenge me mentally. And I found that the operations cadre at these things very well, and it's a great job to have.

*Walk us through it, then, in your case, what are the steps from college and through your career that had led you to finally become an astronaut?*

After I graduated from the University of Connecticut with an engineering degree, I went to work for Pratt & Whitney in East Hartford in Connecticut as an engineer, worked there for about five years. While I was working there I went to school at night to earn a master's degree in electrical engineering. About the 1986-, 1987-time frame, I went to my first astronaut application; I wasn't selected, obviously, as an astronaut candidate. I was still very, very interested in working for the Johnson Space Center. So, I picked up the family in 1987 and moved 'em all down to Houston to work as an engineer here at JSC... worked in the Shuttle Operations Directorate, learned the ropes of the operations procedures, eventually became a flight controller in the mission control room... meanwhile, also returned back to school and got a second master's degree, this time in space science. All this time, I continuously sent in my astronaut applications and, eventually in 1992, I was selected as a mission specialist candidate. When I selected that time, continued working here at the Johnson Space Center, continued sending in the applications, interviewed again in '94, and, unfortunately, didn't get selected as an astronaut. But, eventually, in 1996, I was selected with the 16th astronaut class. So, it took me about fourteen years of working as an engineer, three college degrees, nine years of astronaut applications, and three interviews to finally get selected in 1996.

*Along a lengthy course like that there must have been probably more than one person who stands out in your mind as being influential and being encouraging in your efforts. Talk about some of those people in your life.*

Well, obviously my mother and father had a lot to do with who I am today. And while I was in high school, I had several teachers - two or three teachers - that, that, that, that were very, very nice and very, very encouraging. And then, of course, working up at Hamilton Standard I had several supervisors that were great guys and taught me a lot about being an engineer and doing a good job. And then, of course, my wife has been with me through all the time, and she's always supported me in everything I've done.

*As we mentioned, STS-106 is your first assignment as a member of a space shuttle flight crew. Can you give us some sense, after the course that you just described there, after a number of years, of how you'd get the news that you have been selected to fly in space?*

Well, obviously I was very excited, but the way it worked my added the STS-106 mission to the space shuttle manifest kind of late in the flow due to the delays in the Service Module. And due to the fact that it was going to have a very short training flow, I didn't really expect to get selected for this mission - I thought they would go for all seasoned astronauts, and I'm not, I'm not a, I'm not a seasoned - I'm, I'm, I'm, of course, excited and thrilled to be part of the flight crew. I wasn't really too concerned about the short training flow 'cause I had been at the Johnson Space Center for about a dozen years, and I've been training as an astronaut for over three years, so I felt pretty comfortable that we could accomplish the training I needed in six months.

*Well, let's talk about the details of that. As you say the mission was added to the manifest late in the game, and it's a relatively very short notice in comparison to the history of the space shuttle program, where missions have been on the books for a year or more before they're actually flown. Talk about the factors that were involved in the decision to add this mission to the flight schedule.*

Well, as we all know, the space station is a huge program. There's many, many, many, many, many, many, many, many, many, many, many software involved in the building process. So, things are not always going to go as planned, hardware is not always going to be ready on time, launch delays are going to occur. I think STS-106 is a good example of how NASA can successfully recover from these unplanned events and continue the program to a success.

*As you said that because of delays in launches of parts, other components of the station, this mission's had to be added. Can you describe the main goal of STS-106? What is it that you and your crewmates are going to do on this mission?*

Our primary goal is to install several pieces of equipment in the Zvezda Service Module, approximately 1,000 pounds of critical equipment - and also to stow a lot of equipment, removing it from the space shuttle's SPACEHAB cargo, putting it on board the Service Module and the FGB and the Unity that are already up there, stowing food and water, clothes and supplies, for the first Expedition crew. So we're going to be installing equipment, and we're also, we're also ready to receive the first Expedition crew that will be docking with the station, hopefully later this year.

*As you've mentioned and just described, that's quite a lot of work that you and your crewmates have set out to accomplish in order to get prepared. From your point of view, have there been special challenges involved for all of you in getting ready to fly to the station, in having just those number of months to get ready to do so?*

The training team at the Johnson Space Center and the folks in Star City, Russia, have been great supporting us. All the facilities have been, have been great, and, and, and, and, and, and, and, and, and, allow us to train in a timely manner, so everything has gone really well. I guess some of the bigger challenges have been in the EVA training - we've had some, some, some, some, some, some, some, some, but I only say that because half of the hardware is here in Houston, in the United States, where the Unity and part of the FGB are stocked up, and we'll perform some of the training here, and then a few weeks later we'll have to go to Star City, Russia, and perform the second half of the, of the, of the, of the, of the, of the, of the, of the, of the, discontinuity in the training between here, the United States, and Russia, which is something, of course, we won't see on orbit. But I don't think it's going to be a problem - I think once we're on orbit everything will go smoothly.

*One last question on the circumstances of your coming to this mission. As we've said, it's a compressed training flow, as it's called, and you've been in the astronaut corps, you've been involved in something that is new and is more* right along*?*

Well, like I said, when I was first named to this crew I was thrilled, and very excited about being part of it. Every training event has been very, very good, very, very good. I'm very, very, very happy about it. I don't know some folks can't haven't enjoyed working since then. I'm really enjoying it.

*Your flight is the first shuttle mission that will dock to the Russian-built Zvezda module, the Service Module and also a Progress supply vessel attached to it. The rendezvous similar to, but not exactly the same as, the previous shuttle dockings to the Mir station. Talk about the differences between the rendezvous day. What is going to go on, and what is the course of doing that, tell us about what you will be doing while Terry Wilcutt is flying Atlantis to this rendezvous and docking?*

Every member of the crew has a very specific task on rendezvous day, we all have been trained for these tasks. The space shuttle will approach the space station from below; we'll get within about 500 feet, and, and, and, and, and, and, and, and, and, and, we'll stop the space station, coming in from the top. At that point, we'll complete the docking as we come from above the station down to docking with it. From the Earth's perspective the space shuttle will be upside down, facing down, the station below, and then the Earth below that, so from the, from the, from the, from the, from the, from the, from the, from the Earth in the background. My specific task is going to be, positioned at the overhead window inside the space shuttle, pointing a handheld laser at the space station to determine the range and range rate with the space station in relation to the space shuttle. I'll be passing that information, that information, that information, that information to fly the approach and docking with the station.

*Is there a reason why the shuttle's not just flying up from Earth and docking? Why does it have to fly around and come down to hook up to the front end of the station, that PMA on the front of the Node?*

The way the space station is configured is we're going to be docking with the Node, the PMA attached to the Node, which will be pointing up in relation to the Earth. All the antennas that are used to communicate with the ground stations are located on the Service Module and the FGB on the bottom portion, so we want those clear of any, any, any,