Astronaut Life When Not Assigned to a Mission Crew

An Astronaut's dream would be to be assigned to mission after mission so that one would always be in a crew training mode, and flying a mission every year or so, so that your mission readiness would always be at its peak, and you could begin to reduce repetitive training requirements. But preparing for a mission is a demanding period of time, and often requires 10-12 hours per day of training in simulators, classrooms, labs, contractor facilities, and in the case of pilot Astronauts, flying to a training range to spend time flying the Shuttle Training Aircraft (STA) in repeated "dives" at the runway, flying the desired approach path so as to become intimately familiar with what "normal" and "highly abnormal" situations look like, and how to recover for a reasonable opportunity to land. The key thought to remember is that the Space Shuttle was a glider during all of re-entry, so there was one chance to make a successful landing. That resulted in hours spent in the STA, with hundreds of practice approaches before the first flight in the right seat. Yes it was fun in many ways, but at a continuous pace, it could become tedious and contribute to "burnout" for you, and also your family, especially your family!

But there was (is) much more to the Astronaut experience than just training as a crew member for an assigned mission, though that was extremely important. Just as in many operational organizations, there were many support positions to be filled, organizational management positions that allowed the Astronaut Office to function with guidance and purpose, and a myriad of design, development, build, test/evaluate, projects to support, and then integrate into the operations concepts for the Space Shuttle Program and develop the procedures for use of new capabilities. These tasks were the very essence of why there were test pilots selected as Astronaut pilots, and why that aspect of our background was important to NASA. In addition, the mission specialist Astronauts were performing the same type of critical functions for payloads that were being developed and tested for future missions. I am very sure that some payloads were successful because of this mission specialist involvement early in the life of the payload, especially if there was to be a capability to work on a payload in space during a "spacewalk" (EVA, Extra-Vehicular Activity).

There were many more activities that were needed to support the Astronaut Office functions, the Space Shuttle Program, the NASA Space Centers, and individual missions of the Space Shuttle. The number and variety of the activities was always changing and growing, to the point that during the heart of the Space Shuttle Program, more than 150 Astronauts were always busy, each supporting a number of projects or jobs to make each mission a success. There were many jobs or projects I was directly involved in, when not assigned to a specific mission. My first extra duty assignment was to be a member of the Astronaut Office liaison to all the Space Shuttle processing work that took place at the Kennedy Space Center (KSC) processing facilities for the Space Shuttle. Because of the time commitment, and the nature of some of the work required, this job was referred to as being a "Cape Crusader" since all the work was performed at Kennedy Space Center/Cape Canaveral, Florida. This work involved many different aspects of Shuttle maintenance, testing, assembly to a "stacked" configuration, transfer to the launch pad, final testing, and then the support of the actual countdown to launch. I did this job for over two years prior to the Launch of STS 1(Space Transportation System 1, the first Shuttle mission). As part of this work for the first mission, I helped develop countdown procedures that involved crew actions, and became the first Astronaut Support Pilot (ASP) for the Space Shuttle Program, who was an

Astronaut member of the closeout crew that strapped the flight crew into their seats just prior to launch. I developed, along with other KSC specialists, the procedures, timeline of activities, and tool kit needed by the ASP to perform that job. The entire process of performing this work for two years was an excellent way to gain detailed knowledge of Space Shuttle configurations, systems design and layout, systems functioning, crew module displays and controls, overall integrated testing, and an overall knowledge of the care and attention to detail that was the hallmark of the ground processors at KSC. This experience helped inspire in me extremely high confidence in the readiness of each mission to launch at the conclusion of the processing sequence, and was another huge example of situations I had been exposed to many times in my career to that point, "It's all about the people involved, and the pride they have in their work." After the Launch of STS 1, I had to hustle to White Sands Range in New Mexico to be available as Astronaut support in case of a landing there, and then just prior to the actual landing at Edwards AFB, CA, I was told to get to Edwards AFB, to be available as Astronaut support when the flight crew (John Young and Bob Crippen) were ready to get out of the Shuttle. So, after two plus long years of TDY, and direct support of STS 1, because of moving from launch site to contingency landing site, to actual landing site to support post landing ground ops, I missed EVERY launch party and post landing party for the mission. To this day, I feel somewhat cheated by that outcome!

Throughout my 15 years in the Astronaut Office, interspersed between the three missions I flew on, I performed a number of other tasks and projects that were essential to support of the Space Shuttle Program. Following STS 1, I was assigned to monitor the build of the second space qualified Shuttle, "Challenger" which required more TDY to Palmdale, CA, where I really got to see the complicated details of how all the parts of a Space Shuttle went together—amazing! I also was assigned to fly one of the chase aircraft (T-38's) used early in the Shuttle flight history to join up with and "chase" the Orbiter during landing. Practice for the rendezvous was fun, but on landing day if any part of the intercept got messed up, the chase probably would not have been much help. I was involved in many development projects, to add capabilities and procedures for improving operations. It may not have been common knowledge, but the Shuttle Obiters did not have landing lights, so early in the program, there were no night landings. I was assigned to a project to develop a night landing capability for the program, during which we experimented with various ground light configurations for general runway lighting and glide slope intercept and maintenance. Our best configuration had a well-lighted landing zone and runway edge lights or reflectors, but would be considered minimal by most standards. But the system worked, and was used many times during the program. I served as the Astronaut Office Operations Branch Chief for a period of time, and was involved in fight safety functions as well. Just before I left the Astronaut Office, I served as the Deputy Chief of the office, making assignments to others and making sure we supported the needs of other organizations of the Space Shuttle NASA Centers. All these activities, which were never ending, coupled with various training opportunities that were often available, resulted in a wealth of experience in a number of areas, all of it helping to position each Astronaut in line for selection to a crew for a specific mission. My mission stories will follow in sequence.

Loren Shriver

USAFA Class of 1967

(Story #4)