TEACHER SPACE CAMP

 I attended Teacher Space Camp at the NASA Space and Rocket Center in Huntsville, Alabama from July 14-19, 1998. The cost for the six-day experience was $750, and it included all training, materials, lodgings and meals. I paid for this adventure myself, after my Natomas School District (where I had been teaching fifth grade since 1988) declined to pay for what turned out to be the best in-service seminar of my thirty years of teaching. I also received college credit from the University of Alabama for my extensive efforts, under the program entitled “Exploring Space: The Classroom Connection.”

 I was joined by elementary and high school educators from around the country. We were placed in three teams of 14 each, with four men and ten women per team. I was in Team #1. On our full days, we rose at 6 a.m. in our dormitory and went to bed around midnight, although the schedule officially began with breakfast at 7 a.m. and concluded after a class at 9 p.m. We got daily physical exercise, and were involved in various highly interesting activities every day.

 We were issued powder-blue NASA flight suits with our name tag (I still proudly have mine), and initially briefed on a detailed history of the U.S. space program. We then had a model rocket building project, team-building exercises, art projects, various classroom activities we could use later with our students back home, science experiments such as hydroponics, other laboratory projects, computer use, and we enjoyed three IMAX movies all featuring actual space flights and orbital footage. We also met with NASA astronauts (both veteran and in-training), saw real space rockets and equipment, plus we were given a talk by Dr. Konrad K. Dannenberg (1912-2009), who was 86 years old at the time. He was a German scientist working for the Nazis during World War Two, before being bought to the U.S. with a team of rocket scientists under the direction of Dr. Werner von Braun. These men ultimately helped form the basis of our country’s space program – especially our effort to successfully land men on the moon.

 The most exciting activities, however, for us educators was our getting to use actual astronaut-training equipment. We used real space suits and had our walking temporarily reduced to the one-sixth gravity that you would find on the moon. We spun around at high speeds in a centrifuge. We rode a “space shot”, which vertically blasted one straight up about 250 feet at 8 times the force of gravity in two seconds. We were suspended off the ground in special harness suits using wires and pulleys to simulate zero gravity, and we were given the tricky task of using wrenches to attach metal bolts and nuts – your whole body would move and turn with just the wrist motion! There was even an enormous scuba-diving tank which simulated zero-gravity in outer space, where one was given tasks to perform while under water. I and my fellow teachers felt like kids at a summer Scout camp, having fun yet learning skills at the same time!

 Without our knowledge, however, was the fact that we were always being watched and evaluated by our two counselors, Amy and Karrin. They were getting us ready as upcoming crew members for the grand finale of our teacher space camp experience – a ninety-minute mission sealed in an actual life-sized Space Shuttle simulator used to train NASA astronauts, with all of its myriad computers, colored lights, blinking monitors, communication systems, and switches.

 Each ‘launch’ had a crew of seven: a flight commander, a co-pilot, a navigator, a payload/satellite specialist and a science experiment specialist (who would both ‘enter’ the International Space Station for item delivery and retrieval once we ‘docked’ with it), and two astronauts who would ‘exit the vehicle when in orbit’ on tethers to do equipment replacements and repairs.

 The day before our ‘flight’, we were asked to volunteer for the crew member job we would most desire. I choose the payload/satellite specialist. But I was surprised when our counselors later gathered our team of seven together after dinner and announced, “Jack, we are nominating you as the flight commander for the Space Shuttle Endeavour. We have watched you carefully over the last few days. You have the right temperament, leadership skills, adaptability, intelligence, and quick-thinking that is crucial for a good commander. Kay Cooper will be your co-pilot. You will both be given manuals to study tonight, which will cover all aspects of your flight and in particular what to do in the several emergencies which we will confront your crew with during launch, orbit, docking, EVAs, and landing. Good luck.”

 Well, I was certainly a bit nervous, and I stayed up quite late that night pouring over the three-inch thick flight manual binder (as did Kay in the women’s dorm, as she confessed to me the next day at breakfast.) The other male on my crew had been to teacher space camp the previous year, and he told me that his commander had ‘crashed’ their flight upon landing, ‘killing’ all on board(!) “Please don’t kill us, Jack!” he pleaded.

 After lunch, we prepared for our 1:30 – 3:00 p.m. flight. We were sealed in the life-sized space shuttle simulator after we buckled our seat harnesses and activated our communication headsets and microphones. Next, the entire cockpit was tilted backward, so we were on our backs looking upward. We could see out the six cockpit windows. We talked with Amy and Karrin in Mission Control. They explained that we would be given ‘unexpected emergencies’ to deal with over the next ninety minutes, but that our manuals contained the correct codes to enter on our consoles and procedures to follow, but that we had short time limits to avert disaster. We had to communicate well together as a crew and remain calm. As flight commander, I had the ultimate ‘say’ in final decisions, and was in over-all control.

 The countdown began. Main engine start happened at zero. The whole capsule shook with vibrations as the engines roared to life. Out the windows, we could see our simulated lift-off, with the shuttle ‘moving’ upward. Soon – after main engine cut-off and external fuel tank separation -- we were in the blackness of space, and could see the Earth from ‘orbit’. We saw the distant Sun and our Moon and many stars. Our control panels and monitors were churning out impressive displays of data. Our cockpit had leveled itself by now, so we could see straight ahead. It was all very realistic!

 But just when we started to relax and converse among ourselves on our headsets, alarm lights went off, and we were told by Mission Control that they had detected an oxygen leak. We had 60 seconds to find it and fix it, or we would all ‘die of suffication’! Kay and I quickly searched our manuals for the correct procedures. There were certain switches to throw and codes to enter; we succeeded with just seconds to spare. We were both sweating as we looked at each other, thankfully with relief. During the rest of the flight, we were given several other ‘emergencies’ -- even one not in the manual -- so we had to use our best logical judgement and figure out what to do, which we fortunately did.

 During the course of our flight, we had to ‘depressurize’ part of our cabin so that two of our crew could tether up and go outside the capsule to make repairs. Later, docking with the International Space Station (a rather tricky and nerve-wracking experience involving a joystick controller), other crew members had to crawl through a connecting hatchway, to drop off and retrieve various payload items. We had to fire our retro-rockets exactly on time to both dock and undock from the ISS.

 Finally, it was time to leave orbit and return to Earth. This was a very precise action, for everything had to work out just right, in sequence, to land safely. Our cockpit tilted downward now, and we could see ‘flames’ outside our windows as we ‘re-entered’ our planet’s atmosphere. Our craft realistically shook and bucked. Gradually, we could see our landing runway. Using the joystick again, I had to very slowly and carefully line-up our craft based on our computer numbers. We also got updated instructions from the ground on weather and wind speed and if our angle of descent was nominal. Co-pilot Kay lowered our wheels as we leveled off for touchdown. There was an realistic ‘bump’ as we landed on the runway. Our crew congratulated each other, and the other six members left the vehicle one at a time through the now unsealed hatch. I stayed behind to do the final system checks and shut-offs. Then I exhaled a huge sigh of relief and looked around the cockpit one last time, alone. I was sweaty from the exertion but it was a feeling of pure, new accomplishment and true elation. As I exited the capsule, my crew and Amy and Karrin all applauded and cheered! We all hugged, and they toasted us with bottle of sparkling grape juice. The other man on my crew was so happy that I didn’t crash the Shuttle!

 The final day, Team #1 took a group photo in our powder-blue flight suits. (The other seven members had likewise survived their separate flight simulation.) I took home an enormous amount of teaching materials in two large bags, each weighing about ten pounds: posters, lesson plans, VHS videos, photographs, NASA contact addresses, and much more.

 Teacher Space Camp remains for me a unique memory of a lifetime…

 THE END

 by Jack Karolewski December 28,2015