

# UP

## One Man's Journey to Feminism

**Peter W. Pruyn**

he / him / his\*

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Cover photo: 7,500 feet over Galveston Bay early on a Saturday morning. ©2020 Peter W. Pruyne.

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Content warning:  
Contains descriptions of physical and emotional violence

\* Pronounced “prine”. He/him/his: This is the set of pronouns I ask others to use when referring to me. People who identify as transgender or gender nonconforming may use pronouns that do not conform to binary male/female gender categorizations, such as “they, them, theirs.”

## 8: Houston

Age 33-37  
(2000-2004)

*“If the primary aim of a captain were to preserve his ship, he would keep it in port forever.”*  
— Thomas Aquinas

*Returning from Vietnam, I set my professional sights on NASA in Houston. Coincidentally, my friend Isaac is now in graduate school in Houston. It turns out that if you have a technical degree with a background in aviation and teaching, it is possible to get what I consider my dream job—well, dream job short of actually being an astronaut, anyway. The following is the sequence of events that made that happen.*

### Diary of How I Got My Dream Job

1996: Read *Before Liftoff*, a book about training space shuttle crews, written by family friend, HENRY.  
June, 2000: From Alaskan friends VERN and LURA, get the name of astronaut extra-vehicular activity (E.V.A.) trainer ARNE.  
July, 2000: Ask HENRY if he knows anyone I could talk to about NASA training jobs.  
7/31/00: From HENRY, get TED’s name, former space shuttle lead instructor featured in his book. From TED, get MIKE’s name, manager of the space shuttle flight control training group. Talk on the phone with MIKE; send him my resume.  
8/2: E-mail ARNE. Get name of NASA training subcontractor BARRIOS Technologies.  
8/25: Through GORDON, a relative, speak to JIM, former technical trainer at Kennedy Space Center.  
8/28: JIM contacts old training friends in Houston. Gets me name of ILLIANA, director of United Space Alliance training division.  
8/31: Drive from New York to Houston. Stay with friend ISAAC while looking for apartment.  
9/1: Call MIKE and tell him I’m now in Houston. MIKE apologizes for not having reviewed my resume yet.  
Stop by BARRIOS corporate headquarters. Peruse company press-releases, photo albums, company newsletters.  
9/3: Submit resume to United Space Alliance and BARRIOS Technologies’ web sites for training positions.  
ISAAC puts me in touch with PAUL, service academy classmate of two astronauts.  
Try to contact MIKE for a week and a half, unsuccessfully. Finally send him a postcard that says, “A friendly reminder to review Peter Pruy’n’s resume. :)”  
9/14: Have lunch with PAUL.  
Still unable to get a hold of MIKE. Get to know his secretary real well. Send him another postcard: “Just wanted to let you know I’m still interested in working for you.” Hope that MIKE is getting multiple copies of my resume from completely different sources within NASA.

- 9/16: Move into my own place. Focus on job-search.  
 Speak with ILLIANA on the phone and e-mail resume to her.
- 9/19: PAUL forwards my resume to some friends at NASA.
- 9/22, Friday: Get call from JASON, a corporate recruiter at BARRIOS. He doesn't know who forwarded him my resume. Tells me an astronaut instructor position will be open next Monday. He will forward my resume to the hiring manager. I am to check the BARRIOS website Monday for job posting.
- 9/25, Monday. Check website. No posting. Call JASON. Says he'll post it when he gets the announcement. DAVE from BARRIOS calls. Wants to meet with me tomorrow at 2. "O.K." (!) DAVE calls MIKE later to ask if he knows a Peter Pruyn. MIKE: "Oh, yeah, I know that guy ...." DAVE gets to see MIKE's secretary's phone log showing all the times I called. They laugh about my postcards. DAVE: "Well, you sure can't fault Peter for trying, can you?" Check BARRIOS web site again. Still no posting.
- 9/26, Tuesday. Interview with DAVE. 1.5 hrs. in BARRIOS conference room. 1.5 hours touring NASA simulator facilities, including sitting in the commander's seat of the full-motion space shuttle simulator. (!! ) DAVE keeps saying things like, "Your office will be over here. You'll spend most of your time here. Your boss will be MIKE." He doesn't say, "After I get through interviewing the other ten candidates, we'll see what happens." DAVE makes appointment for me with MIKE at 8:30 a.m. the next morning. Check BARRIOS web site. Still no posting. Begin to suspect I'm the only one who knows about the position and is being interviewed for this job. Sleep poorly.
- 9/27, Wednesday. Meet with DAVE and MIKE for 1.5 hours. MIKE has to step out for 45 minutes to go home because his two-year-old had accidentally gotten locked in their mini-van in the garage with the engine running. When rescued, the child was reported to be enjoying listening to the car radio. MIKE admits to getting my resume from three independent sources: myself, ILLIANA, and DAVE. MIKE says, "The planets must have been in alignment." Tour Mission Control. (!!!) Told to expect call from BARRIOS Human Resources mid-next week. (!!!!) Expect at any moment to wake up in bed with my alarm clock going off.
- 10/5, Thursday. I get the call. DAVE officially offers me the position of Space Shuttle Guidance, Flight Control and Propulsion Instructor, Spaceflight Training Division at the Johnson Space Center in Houston.

In summary:

HENRY → TED → MIKE  
 GORDON → JIM → ILLIANA → MIKE  
 ISAAC → PAUL → PAUL's Friends ↘  
 VERN & LURA → ARNE → BARRIOS → JASON → DAVE → MIKE

As Doug would say, "*Good jawb, Petuh!*"

National Aeronautics and  
Space Administration  
**Lyndon B. Johnson Space Center**  
2101 NASA Road 1  
Houston, Texas 77058-3696



Reply to Attn of:

AHX

August 8, 2000

Mr. Peter W. Pruyn

[REDACTED]  
[REDACTED], NY 10[REDACTED]

Dear Mr. Pruyn:

Thank you for applying for the Astronaut Candidate Program.

I regret to inform you that you were not selected for the Astronaut Candidate Program during the recent selection process. The Johnson Space Center received more than 3,000 applications for the 10 mission specialist and 7 pilot positions filled. The large number of well-qualified applicants available made the selection process a difficult one. Regrettably, we were able to select only a small number of those with the potential to make a contribution to this nation's space program.

We appreciate the opportunity to consider you for the Astronaut Candidate Program and wish you success in your future endeavors.

Sincerely,

A handwritten signature in black ink that reads "Duane L. Ross".

Duane L. Ross  
Manager, Astronaut Selection Office





Figure 38: Top: Me sitting in the space shuttle simulator. This is the so-called Motion Base that moves. Bottom: The Instructor Station of one of the other shuttle simulators. Each technical training discipline has a cluster of computer monitors to monitor their specific systems and activate malfunctions for the crew to solve.



Figure 39: With the STS-108 crew standing in front of the Motion Base simulator. Second from the left is Mark Kelly, future husband of Gabby Giffords. (Photo courtesy of NASA.)





Figure 40: It takes a village. The instructor team that trained the STS-113 crew. We are standing in front of a full-sized mock-up of the shuttle used for crew procedures training. (Photo courtesy of NASA.)

## Camilo's Wish

While living in Houston, I decide to become a volunteer with the Make-a-Wish Foundation, a non-profit that grants wishes to children with terminal or life-threatening illnesses. As a wish-granter volunteer, I assist with implementing the children's wishes.

One day the Houston office of the Make-a-Wish Foundation calls me regarding a boy whose wish is to be an astronaut. Knowing that I work at NASA, they ask if I would like to be assigned to this wish. I readily agree. Astronaut wishes typically involve arranging extended tours of NASA facilities. Ideally, the centerpiece of such tours is arranging for the child to meet an astronaut. Through colleagues, I learn that there is one astronaut who has been involved with a wish before, Piers Sellers. With over 120 active-duty astronauts, I've never encountered Piers during my time at NASA so far, but I learn that he is originally English and came to the U.S. as an earth scientist before being selected as an astronaut.

Astronauts are notoriously busy people, and just trying to get in contact with Piers proves difficult. So when my phone rings from out of the blue, it's surprising when it is Piers, himself. He apologizes for being difficult to reach. I offer that if this is too busy a time for him, I will certainly understand, and we can try and find someone else. His response is immediate and adamant: "No, I want to do this."

I next begin the bureaucratic processes of coordinating with the NASA JSC Public Affairs Office, arranging visitor's badges for the boy and his family, and contacting Piers' scheduler to see when we might be able to fit in a personal tour with Piers. The boy's name is Camilo, and he and his family are beside themselves with excitement that his wish is going to be granted.

When the family finally arrives at the Johnson Space Center, Camilo is wearing a child's bright blue astronaut flight suit replete with mission patches and pins. After a few days of behind-the-scenes tours, the final day is reserved for a tour of Building 9, a cavernous box of a structure that contains life-sized mock-ups of space vehicles, including the space shuttle and sections of the International Space Station.

It's hard to describe the moment when a child gets to meet their dream. Simply, Piers is a prince. There is no pretense. He relates to Camilo as naturally as if Camilo were his own son. Piers' mantra for the day isn't "Hey, look at me!"; it's "Hey, look at *you!*" It was obvious that Piers genuinely wanted Camilo to have as special a day as he could.

And he did.



**Figure 41: Astronaut Piers Sellers and Make-a-Wish child Camilo. In these photos Piers is giving Camillo a tour of Building 9 that houses the full-sized space vehicle crew procedures trainers. In the photo on the left, behind them is the right side of the space shuttle vehicle trainer (visible from the front side in the previous STS-113 training team photo). I've always liked the photo on the right because it captures how Piers genuinely enjoyed putting Camilo in the center of attention.**



As an unplanned extra bonus, when Camilo is getting a tour of the Flight Crew Equipment Building, we learn that another astronaut, Laurel Clarke, is there packing her equipment for her upcoming mission, STS-107. Needless to say, a lot of care and planning goes into helping an astronaut pack their luggage. Laurel's packing was particularly meaningful on that day because her mission, focused on science experiments, kept getting "bumped" by other shuttle missions that were delivering components to the International Space Station. Laurel and her crew had been waiting to fly for two years.

Despite being busy, when word reaches Laurel that a Make-a-Wish child is out in the corridor, she spontaneously makes time to come outside and meet Camilo and his family. She goes so far as to get his name and address and promises to mail him an autographed photo of her entire crew. It is exhilarating for Camilo to meet another astronaut who is not only just about to fly but who spontaneously prioritized meeting him. He could not have been more thrilled.

After a heartfelt goodbye with Camilo and his family, I walk slowly back to my office. I sink into my office chair, stare out the window at the bright blue Texas sky, and exhale. I reflect on the weeks of preparation it has taken and the dozens of people across the Space Center who volunteered their time so willingly to make it all happen. It's all been worth it.

I knew it was rewarding to be an astronaut. But this week I've learned that being in a position to give someone else the gift of "being an astronaut" is on an entirely different plane of rewarding. It's the most meaningful thing I've done at NASA.



**Figure 42: Astronaut Laurel Clarke with Make-a-Wish child Camilo in the Flight Crew Equipment building, June, 2002.**

## *Columbia*

As I leave work on Friday, January 31st, 2003, I pause to look at some of the jokes, quotes, and pictures that the STS-107 training team has put up on the walls. As a welcome home to shuttle crews, it's a tradition that a few days before the crew returns to Houston their instructor team decorates the walls of our long front hallway with mementos of the crew's training and mission. The average shuttle crew trains for about 10 months. STS-107 trained for 2½ *years*. They didn't fly until a full six months after Camilo and his family met Laurel Clarke as she was packing her equipment.

As a result, the 107 training team had a lot of material to use to decorate the hallway. To entertain themselves during those two years, the instructor team invented an 8th crewmember: a 7-inch-tall motorized hamster in a karate uniform complete with nunchucks. When you squeezed his paw, he spun his nunchucks and sang "Kung Fu Fighter" in a high-pitched voice. As part of their hallway decorations, the training team documented a fake astronaut training flow for "K.F." (Kung Fu Fighter). Photos show the small hamster getting certified in the shuttle simulator, getting classroom lectures, having an office tag-up with the chief of the astronaut office, and, most uproarious, sitting on the space shuttle toilet simulator. They even made him a fake astronaut biography documenting his PhD in cheese. I laugh out loud. It's the funniest hallway to-date.

Saturday morning I am woken-up by my phone ringing at 8:25. As soon as I pick up, a friend urgently tells me that NASA has lost communication and tracking with the shuttle *Columbia* during re-entry. Losing comm is not that big a deal. It happens every once in a while. But losing tracking means there is nothing big enough for radar to pick up. I'm afraid to think about what that means.

I had been planning to do some work in the office Saturday morning anyway, so I just go in a little earlier than I had planned. As soon as I walk in the building, I lose my breath: the densely decorated hallway walls are now completely blank. *Oh, no ....*

I get my headset and walk over to the Mission Control building. During simulation training sessions with Mission Control, our instructors sit in a large windowless backroom called the Simulation Control Area (SCA) to monitor the flight controllers who operate the consoles in the front control room. We can also go there to watch video and telemetry during real missions. If anyone in my section was at work, that's where they'd be. After being checked by security, I use my badge to go through the metal doors. Immediately I see Dee, a shuttle software specialist. Her eyes are red and swollen. Our exchange of glances is an entire conversation.

"Hi, Dee."

"Hi, Peter. Did you get called in?"

"No, I just felt like being here."

"Ole and Kelsey are in the SCA."

"Thanks."

Ole, who sits next to me at work, was the Flight Control instructor for 107. Originally from Norway, for the last year and a half we kidded him about how he had never gotten a flight off because his crew spent so much time in training. I walk up the three flights of stairs.

Kelsey, the Data Processing Systems (DPS) instructor, Stephanie, the simulator operator, and John, another DPS instructor are there. Ole has left. Both women have the same symptoms as Dee.

"Hi, Peter," said Kelsey. She doesn't smile.

"Hi," I say flatly. I don't smile back.

John is busy making screen printouts of the data on the workstations and his console logs. That's what you do. You can't do much, but that's what you do; you preserve the data you have. A ground track map displayed on the overhead monitors shows little orange triangles of tracking data that heart-wrenchingly stop abruptly in eastern Texas.

Kelsey and Stephanie decide to return to our building. There is nothing more to do. The



phone rings. I answer it.

“SCA, this is Peter.”

“Hi, Peter, it’s Ole.” My shoulders sink.

“Hi, Ole.”

He wanted to speak to Kelsey. I tell him she’s already left and suggest he call Mike, our section manager.

What could I say?

“I’m sorry, Ole.”

I have nothing to do either. I go back to the office and walk upstairs to the division office. Other STS-107 instructors are there filling boxes with the training records that will be sealed and become part of the accident investigation. The crew’s training scheduler, Darla, is sitting in front of a television. Darla is one of the sweetest people I know. She worked with the crew and their families closely and intensely for the last two-and-a-half years. For Darla, they weren’t “like” family; they *were* family. Now CNN is replaying the video of their tragedy over and over again. She sobs. I put my hand on her back.

I consider ripping the television off the wall and throwing it out the window.

I think of Laurel Clarke and the day she spontaneously made time to meet Camilo. His mother later told me that Laurel had made good on her promise to mail Camilo an STS-107 crew photo signed by the entire crew. Camilo cherishes that photo.

Now Laurel is gone.

Besides Laurel, I knew the crew slightly. My crew’s sim sessions would sometimes overlap with theirs, and we’d see them in the halls.

One memory I had of them always brought a smile. After working at NASA only six months, I was still in awe of the fact that I was anywhere near the space shuttle simulators. One day to further my training, I sat in on a 107 sim. One of our instructors, Susie, was teaching the crew a special manual abort maneuver. It required a crew member to count to five out-loud before the commander, Astronaut Rick Husband, was supposed to take the control stick and fly the maneuver. Another member of the crew, Mission Specialist Kalpana Chawla, was assigned the task of calling out the five-count. When we reached the appropriate moment, Susie and I heard in our headsets an excited female voice with an Indian accent shout, “Onepotatoe-twopotatoe-threepotatoe-fourpotatoe-fivepotatoe!” It seemed more like two-and-a-half “potatoes”. Susie and I exchanged glances and burst out laughing, not only for the speed of the “potatoes,” but at the idea of reducing a life-critical abort maneuver to a vegetable metric. Susie said what I was thinking: “Those were some fast potatoes!”

A critical part of any sim training session is the crew debriefing their performance afterwards, both from a technical point of view, as well as in terms of CRM. Sure enough, during the sim debrief, Rick remarked, “Those were some pretty fast potatoes, Kalpana.”

Kalpana reluctantly agreed.

On Monday, I stop by the desk of my training team lead, Steve. All training has been canceled for the week. As the other training leads are chatting, attempting to come to grips with the events of the weekend, Astronaut Eileen Collins stops by. Eileen was the first female space shuttle commander and is now the commander of the mission that is scheduled to fly next. She had wanted to tag-up with her training lead about not having any training for her crew anytime soon. Her crew knew the 107 crew well.

She describes how launch preparations of *Atlantis*, the shuttle for her mission, are going at the Cape. Then she says, “You know how I really feel? I want to fly so badly. It’s selfish, I know; but that’s how I feel.” I sense in her tone that this isn’t coming from a macho, let’s-rush-the-investigation kind of way. I feel she is expressing our collective purpose and resolve, and by doing so validating

that identical purpose and resolve shared by the friends she lost that weekend.

When special moments happen to you, sometimes you're so overwhelmed by them that you can't appreciate them as they are happening. But not this time. For those few minutes, I was standing two feet from one of my heroes and listened to her say the most heartening thing I had heard or felt for the last week. I knew this as it was happening and knew how lucky I was to be there.

Arriving at work Thursday morning, I stop at a bulletin board in the front hall. Among the flyers for cars for sale and rooms for rent, someone has posted a short poem about loss. As I read it, people continue to walk past behind me on their way to work. Someone pauses behind me, and I look up to see who it is.

It was time for Darla to put her hand on my back.

Seven months later, the Columbia Accident Investigation Board (CAIB) issues its report on the cause of the accident. The immediate cause was that during launch a briefcase-sized piece of foam insulation broke off the large orange external fuel tank and hit the leading edge of the shuttle's left wing. This caused the heat-resistant panels on the wing to fail during re-entry, allowing the hot gasses of re-entry to enter the wing, causing structural failure. Beyond this physical cause, however, what is most arresting about the *Columbia* accident is the striking similarities with the *Challenger* accident that happened 17 years before in 1986.

In both cases, a vehicle component had been showing warning signs of not working as designed over several previous missions. In the case of *Columbia*, it was the shedding of insulation damaging re-entry tiles. In the case of *Challenger*, it was rubber O-ring seals in the twin solid rocket boosters not sealing properly. The sociologist Diane Vaughan would later term the willingness to continue to fly in spite of such erosion of safety margins as "normalization of deviance."<sup>41</sup>

In both cases, lower-level engineers had deep concerns about both flights where the accidents occurred. In both cases they tried to voice their concerns up the chain of command, but middle managers did not carry their concerns forward to mission decision-makers.

In both cases, schedule pressure was cited as a contributing factor. In the case of *Challenger*, there was political pressure to prove the reliability and flight-rate of the relatively new shuttle system. In the case of *Columbia*, there was pressure to complete the International Space Station.

Investigators also named the flip-side of NASA's "can-do" culture as a contributing factor: "NASA's attitude historically has reflected the position that 'We can do anything,' and while that may essentially be true, NASA's optimism must be tempered by the realization that it cannot do everything."<sup>42</sup>

NASA had not learned. The CAIB named this directly: "... the causes of the institutional failure responsible for *Challenger* have not been fixed" resulting in "flawed decision-making for both accidents."<sup>43</sup> It ended its organizational analysis with this wisdom naming the dynamics of power involved: "... people who are marginal and powerless in organizations may have useful information or opinions that they don't express. Even when these people are encouraged to speak, they find it intimidating to contradict a leader's strategy or a group consensus. Extra effort must be made to

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<sup>41</sup> Vaughan authored the definitive scholarly analysis of the *Challenger* accident: *The Challenger Launch Decision: Risky Technology, Culture and Deviance at NASA* (1996). Chicago: University of Chicago Press.

<sup>42</sup> *Report of the Presidential Commission on the Space Shuttle Challenger Accident*, National Aeronautics and Space Administration, 1986, p. 173. Retrieved from:

[https://spaceflight.nasa.gov/outreach/SignificantIncidents/assets/rogers\\_commission\\_report.pdf](https://spaceflight.nasa.gov/outreach/SignificantIncidents/assets/rogers_commission_report.pdf)

<sup>43</sup> *Report of Columbia Accident Investigation Board, Volume I*, National Aeronautics and Space Administration, 2003, p. 195. Retrieved from: [https://www.nasa.gov/columbia/home/CAIB\\_Vol1.html](https://www.nasa.gov/columbia/home/CAIB_Vol1.html).

contribute all relevant information ....”<sup>44</sup>

As someone who works in the training organization that helps train astronaut crews to make effective group decisions, it was a tragedy upon a tragedy to see how the principles of Cockpit Resource Management (CRM) had not yet been implemented at NASA at the managerial level. If you thought of NASA as an airliner, upper-level managers were the captain and engineers were the copilot. The copilot was not being heard.

It is important to acknowledge that operational environments will always contain some degree of risk. Good CRM isn’t about eliminating risk; it’s about managing risk to the best of our abilities.<sup>45</sup> The bottom line was that if mission managers had had a more accurate picture of what was going on, they could have made better decisions.<sup>46</sup>

What does it take for a task-oriented, ‘can-do’, hierarchical organization to learn?

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<sup>44</sup> *Report of Columbia Accident Investigation Board, Volume I*, National Aeronautics and Space Administration, 2003, p. 203. Retrieved from: [https://www.nasa.gov/columbia/home/CAIB\\_Vol1.html](https://www.nasa.gov/columbia/home/CAIB_Vol1.html).

<sup>45</sup> Former astronaut Jim Wetherbee likes to make the distinction between managers *managing* risk and operators *controlling* risk. For more, see his book *Controlling Risk: Thirty Techniques for Operating Excellence* (Morgan James, 2017).

<sup>46</sup> For a full description of the version of CRM we taught astronauts, see: Pruyn, Peter and Michael Sterling (2006). “*Space Flight Resource Management: Lessons Learned from Astronaut Team Learning*”, *Reflections Journal*, Society for Organizational Learning, 7:2. Available here: <https://www.solonline.org/library/>. The chart on the next page is from this paper. These materials are sponsored by the National Aeronautics and Space Administration under Contract NAS9-20000. The U.S. Government retains a paid-up, nonexclusive, irrevocable worldwide license in such materials to reproduce, prepare derivative works, distribute copies to the public, and to perform publicly and display publicly, by or on behalf of the U.S. Government. All other rights are reserved by United Space Alliance, LLC.



# SPACE FLIGHT RESOURCE MANAGEMENT



# PERFORMANCE ELEMENTS




- SFRM Debrief Concepts:**
1. Raise and initiate discussion of SFRM topics directly with each other.
  2. Critically analyze the situation and discuss the impact that SFRM skills had on the scenario's outcome.
  3. Develop and implement strategies.
  4. Develop self-critiquing habits.

**Command:**  
the exercise of **authority** to ensure mission objectives are successfully completed.

**Sub-Elements:**

- Commander's Authority
- Crewmember Authority
- Responsibility
- Accountability
- Crew Coordination



**Leadership:**  
the exercise of skills and techniques to establish a safe, efficient and effective team.

**Sub-Elements:**

- Crew Climate
- Mentoring
- Professionalism
- Conflict Resolution

**Communication:**  
the process of exchanging information, ideas, and thoughts in an accurate and timely manner so that the message is clearly received and understood.

**Sub-Elements:**

- Crew Communication
- Inquiry
- Advocacy/ Assertiveness
- Recognition of Barriers

**Workload Management:**  
the process of evenly distributing activities by planning, prioritizing, and assigning tasks to individual team members.

**Sub-Elements:**

- Planning and Prioritizing
- Overload Recognition
- Task Assignment

**Situational Awareness:**  
the continuous ability of the **team** acting as a single entity to accurately perceive the relationship of themselves and their surroundings. Forecasting and executing tasks must be based on that perception.

**Sub-Elements:**

- Monitor and Anticipate
- Recognition of Low Situational Awareness

**Decision Making:**  
the process of determining and implementing the best course of action and critiquing the outcome.

**Sub-Elements:**

- Decision Making Type: Unilateral vs. Consultative
- Problem Definition
- Decision Making Model: Listing Options vs. Pattern Recognition
- Critique




Figure 43: A summary of the Spaceflight Resource Management (SFRM) teamwork model for effective group decision-making that we taught astronauts: our version of CRM. (From Pruyn and Sterling (2006) cited on previous page.)

National Aeronautics and  
Space Administration  
**Lyndon B. Johnson Space Center**  
2101 NASA Parkway  
Houston, Texas 77058-3696



Reply to Attn of: AHX

May 6, 2004

Mr. Peter W. Pruyn  
[REDACTED]  
[REDACTED]

Houston, TX 77 [REDACTED]

Dear Mr. Pruyn:

Thank you for applying for the Astronaut Candidate Program.

I regret to inform you that you were not selected for the Astronaut Candidate Program during the recent selection process. The Johnson Space Center received more than 2,800 applications for the 6 mission specialist, 3 educator mission specialist, and 2 pilot astronaut candidate positions filled. The large number of well-qualified applicants available made the selection process a difficult one. Regrettably, we were able to select only a small number of those with the potential to make a contribution to this nation's space program.

We will be converting the Astronaut Candidate application process to NASA's automated Staffing and Recruiting System (NASA STARS) later this year. You will have to reapply for the program through NASA STARS to be considered for future selections. You will be notified when you can apply through NASA STARS. You can also check our website for updates.  
[www.nasajobs.nasa.gov/astronauts/](http://www.nasajobs.nasa.gov/astronauts/)

We appreciate the opportunity to consider you for the Astronaut Candidate Program and wish you success in your future endeavors.

Cordially,

A handwritten signature in cursive script that reads "Duane L. Ross".

Duane L. Ross  
Manager, Astronaut Selection Office



## Star Gazing

One afternoon I am receiving instructor training from my colleague, Susie, in what is known as the Fixed-Based shuttle simulator. The space shuttle cockpit has both a front control panel and a rear control panel. The front controls are used during launch and landing while the crew is looking out the front cockpit windows. Once safely in orbit, however, most vehicle maneuvering is done looking aft through two square windows that look out into the cargo bay or through two overhead windows that look up through the roof of the cabin. When astronauts take photos of the earth while in orbit, these are typically the windows they are looking out of. To simulate on-orbit operations, the Fixed-Base shuttle simulator has a full rear cockpit with computer graphics visuals projected outside both the aft and overhead windows.

Today Susie is teaching me an orbital maneuvering class, showing me how to use the shuttle's thrusters to alter its orientation so that I can teach the same skills to astronauts. At some point she needs to go back to the instructor console to configure the simulator, so I am left alone in the flight deck for several minutes.

As I stand there, I look over the aft controls: the rotational and translational hand-controllers for maneuvering the vehicle, the control stick for operating the shuttle's giant robotic arm, and the closed-circuit TV monitors for viewing the cargo bay. The switch panel lights are turned-up so that the multitude of white switch labels glow brightly, slightly warm to the touch, and equipment cooling fans make a steady white-noise hum.

It's highly unusual to be alone in such an expensive piece of equipment with nothing in particular to do. I take-in the computer-generated view out the rear windows of the gentle blue curvature of the earth, and then stare up through the overhead windows to regard the field of stars against the blackness. Could that be the Big Dipper?

Being alone here, I cannot help but feel a resonance with that passage in astronaut Michael Collins' autobiography when he was in lunar orbit on Apollo 11:

I have turned the lights up bright, and the cockpit reflects a cheeriness which I want very much to share. ...inside, all is well,...it is a happy place, and I couldn't make them more welcome unless I had a fireplace ....

I am alone now, truly alone.... I like the feeling. Outside my window I can see stars and that is all ....

Without suffering any delusion of actually being in orbit or actually being an astronaut, I experience a deep sense of kinship with the beauty and awe that Mike was trying to capture.

I feel privileged and grateful.

If this is as close as I come to the real thing, it will be enough.

## Houston Sunset

I take the elevator up to the sixth floor of our building where the astronaut offices are. In the sixth-floor lobby, I swipe my ID badge to open the locked door to the hallway. I always have the feeling of being an imposter here. On the one hand, I work on the first floor, so I'm enough of an insider to be allowed to be here. On the other hand, I'm not an astronaut, so I'm enough of an outsider that I feel like I'm sneaking into a celebrity's home. I constantly wonder who I'll run into.

I make my way down the long grey corridor to a small, windowless conference room. Both the floor and room appear deserted.

A year after *Columbia*, my world feels off-kilter.<sup>47</sup> On the positive side, I have become involved in creating an SFRM (Spaceflight Resource Management) course for managers, am collaborating with some amazing people who have introduced me to the field of organizational learning, and am in the midst of writing an academic paper about our SFRM program with my manager for publication. I love this new kind of work as well as the people who I have found are doing it. I found myself wondering: what would it be like to do this kind of work all the time? What is that job?

Meanwhile, my aspiration to become an astronaut also feels troubled. Based on what I know about NASA, I cannot in good conscience convince myself that its culture will change in the way I feel it needs to for me to feel safe flying into space. If I have a family someday, it doesn't feel fair to ask them to take that risk.

I feel stuck.

Whenever I've faced major life decisions, I've found it helpful to sit down with someone I trust and talk with them about it. Who is the Colonel Sample of this moment? The person who came to mind was Piers Sellers. There was something about the way he interacted with Camilo combined with his prior career as a scientist that made me guess he'd be a good person to talk to.

Piers has agreed to meet with me here this morning.

After waiting a few minutes, Piers opens the door to the conference room wearing his blue flight suit and extends his hand with a welcoming smile. It's been more than a year since Camilo's wish. He apologizes for running a little behind and sits down at the small conference table with me. I'm grateful for any time at all.

I lay out my dilemma to him. I describe my new love of the organizational learning work I'm putting my toe in the water of, the writing, the people I'm meeting, and the possibility of going back to graduate school to learn more about the field of organizational learning. Meanwhile, the dream of being at NASA has been a central guiding force my entire life. It doesn't feel right to suddenly just throw that dream away.

As predicted, Piers is a generous listener. After taking-in everything I've said, he starts to talk about his work as an astronaut versus his prior work as an earth scientist. He explains that his current work assignment is assisting with trouble-shooting the spacesuits astronauts use for space walks. And then he makes a unique observation; he says that while this work is "interesting, it's not fascinating." I've never heard this distinction before, and it feels compelling. He then talks about how as a scientist, you have the ability to design your own agenda. As an astronaut, he is not in control of his work. I glance down at the table to take his words in. I have the sense that I will be reflecting on what he is saying for some time to come.

As if on cue, one of his crew-mates opens the door of the conference room and tells Piers that they need to leave for their next meeting. Piers thanks him, and after the door closes he gives me a knowing look and says, "You see? I'm not in control!"

As he gets up to leave, I shake his hand and express my thanks as gratefully as I can. Just as he is about to pull the door closed behind him, he turns with the same warm smile with which he came and offers his characteristic parting: "Cheers!"

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<sup>47</sup> I wasn't alone.



Figure 44: Sunset on Earth as seen through an astronaut's eyes. Taken by the crew of STS-107, this is my favorite photo of the Earth. It's fun to compare this image with Figure 3, p. 10. (Photo courtesy of NASA, Photo ID STS107-E-5147, retrieved from <https://eol.jsc.nasa.gov/SearchPhotos/photo.pl?mission=STS107&roll=E&frame=5147>)



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