

HAUCK



NASA



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In the front cockpit of a NASA T-38, Capt. Hauck prepares for a training flight.

Capt. Frederick Hauck was mission commander of Discovery, which put America back in space on September 29, 1988. This was his third space flight for a total of 436 hours in space. He went to NASA in 1978 following a distinguished career in the Navy with 5,500 hours flight time and 114 combat missions. In the early 1970s, Captain Hauck spent three years at the U.S. Naval Air Test Center, NAS Patuxent River, Md., as a project test pilot and team leader. He was Operations Officer to Commander, Carrier Wing 14 aboard USS *Enterprise* (CVN-65), where he flew A-6, A-7 and F-14 aircraft. Selected for command, he was Executive Officer of VA-145, an A-6E squadron at NAS Whidbey Island, Wash., just before being selected for astronaut training and assignment to NASA. Captain Hauck left NASA in March 1989 and went back to the Navy as Director, Navy Space Systems (OP-943) on the staff of CNO, Washington, D.C.

Approach: Let's talk about your experiences as a fleet attack pilot and at NASA. How do they compare along the lines of staying mission-ready?

Capt. Hauck: There's an obvious trade-off. In order to be mission-effective, you must have trained in the environment in which you are going to fight. It's a continuous trade-off; for instance, going out in an A-6 flying low-level at night and practicing SAM breaks. That's a dangerous environment. The important thing is to get to the point where you have the ability and expertise. But it needs to be done in a measured way. Don't try to bite off too much too soon, but get to that point of fighting your aircraft the way it

needs to be fought.

Approach: How does that relate to NASA?

Capt. Hauck: We only have three space shuttles. We're building a fourth. We've got to be extremely careful. It's a very valuable asset. It costs \$2.3 billion to build a new one.

Approach: And we thought Tomcats were expensive...

Capt. Hauck: Yeah, that's right. We cannot afford to have another Challenger. The Challenger accident was preventable. There are lessons learned that you could learn from any mishap. Approach magazine, for instance, is very good at presenting those lessons learned. One of

the lessons learned from the Challenger mishap was that you need to be very good at communicating. There is a need for commands to encourage discussion. That's part of the CO's obligation. He needs to provide an atmosphere that permits two-way discussion. He needs to keep his ear open to the junior officers and listen to their concerns, especially as it applies to safety.

Approach: *We say NATOPS is written in blood. How did Discovery change as a result of Challenger?*

Capt. Hauck: There were some concrete changes. Again, much of it had to do with communication. We tested Discov-

ery exhaustively before we flew. We made a lot of changes, not just to the solid rocket boosters. We made more than 1,000 hardware changes. When I say "hardware," I don't mean 1,000 nuts and bolts; I mean 1,000 modification kits. We made more than 400 major software changes. It took two-and-a-half years. It's really expensive to have that asset lying idle. That's where the parallels (between NAVAIR and NASA) are harder to draw. You can't afford to have your war-fighting machine idle for two-and-a-half years.

Approach: *Even with Gramm-Rudman...*

Capt. Hauck: (laughs) Even with



Capt. Hauck rehearses putting on his new orange partial pressure suit near the end of STS 26. (NASA Photo).



Discovery on Approach to Edwards by Stan Stokes. New Masters Gallery, Carmel-By-the-Sea, Ca.



After completing a four-day mission, the five Shuttle astronauts pose with President Bush in October 1988. Capt. Hauck (third from left) was the mission commander. (NASA Photo).

Gramm-Rudman – you’ve got it.

Approach: *Has Discovery now become the way you do business each time, or is each flight so unique that it is impossible to do that?*

Capt. Hauck: You’d like to think we did that each time. You need to be meticulous in the space business, and I think we are. Another difference between how we fly airplanes off the ship and how we fly the shuttle is to have a great deal of data coming back to Houston to monitor the health of the shuttle. We sleep up there, eight hours a night. All of us are asleep at the same time. The people in Houston know more about the health of our machine than we know. However, we do have a very good caution and warning system in the shuttle.

Approach: *Is there a PCL (pocket checklist) for the shuttle?*

Capt. Hauck: That’s an interesting point. When I got to NASA in 1978, there was no PCL for the shuttle. Admiral Truly, who was a senior commander at the time, recognized the need for one. That was my first task with NASA. I brought an F-14 PCL from home. I had another guy bring in an F-15 PCL and a T-38 PCL.

We asked each other what features we

liked about each PCL. The space shuttle PCL is an offshoot of those. It’s tabbed like a Navy PCL and sub-tabbed like an Air Force PCL. We have PCLs for each phase of the mission, one for launch, one for on-orbit and one for the re-entry phase. When you’re on launch, you can’t do the same type of things you can when you know you’re coming back to land. It’s phase-dependent.

Approach: *Is there boldface?*

Capt. Hauck: We don’t memorize, in general. Perhaps I shouldn’t say that. We actually do. There are some things that you do instinctively because of the level of training. There are very few things that we do that can’t wait 10 seconds. Our PCL is digested even more for launch and recovery. We velcro cue cards next to the windows. We don’t have any of our emergency procedures in the software yet (like an F/A-18) because we don’t have the space.

Approach: *How would you rate NASA’s overall safety record? Were the mishaps pretty much the cost of doing business?*

Capt. Hauck: No, I won’t admit to that because Challenger should not have happened. If I said that, it would be like saying we couldn’t have avoided it. We could have avoided it.

It’s different when you’re working with only three or four assets. We cannot afford to be less than perfect with a \$2.5 billion dollar machine. Let’s face it, you can’t have perfection, although you should try for it as we do in Naval Aviation. Naval Aviation is much more demanding on the aviator than flying in space. That’s a good comparison to make.

Approach: *Are you referring to from three-quarters of a mile on in, or in general?*

Capt. Hauck: I think in general. We have so much support, and our training is so exhaustive...when we go to fly, we are trained to the Nth degree. We are trained much more than the Navy could afford to train its pilots. It’s almost as if you’re depending even more on the professionalism, intuition and good judgment of the Naval Aviator. It’s an interesting contrast. People ask me what my family thought about my flying the space shuttle. I tell them, “Hey, I flew off aircraft carriers at night in Vietnam. My family’s gone through much more than that.” It’s just that when I fly the shuttle, my family’s watching me on TV.

– Lt. Ward Carroll