San Diego Shakedown

By Lt. Kyle Ashby

After 18 months of studying and training, I finally had achieved my aircraft-commander (AC) qualification. With this accomplishment came the opportunity to lead an aircrew on an overseas deployment. To prepare ourselves and the airplane, we detached to San Diego to conduct predeployment operational checks. The entire crew looked forward to a few sunny days away from rainy Whidbey Island and possibly some time on the beach when operations allowed. After four flights as the electronic-warfare aircraft commander (EWAC), I was getting comfortable in my new role and felt certain I could handle any malfunction in the EP-3.

Our second flight was scheduled for an easy seven-hour, day-operations check. The preflight was smooth, airspace had been coordinated, and we enjoyed typically sunny San Diego weather.

The crew was working well together. The 2P and I extensively had flown together during our last deployment, and our flight engineer had more than 3,000 hours and multiple FRS-instructor tours. Our takeoff was on time and uneventful. Everyone looked forward to landing by 1800 and enjoying the local attractions.

We didn't know we would return to base much sooner than planned. As we climbed straight ahead through 19,000 feet, the aircraft suddenly began to shake violently—far worse than any turbulence I ever had felt. The vibrations would last for about 15 to 20 seconds, and then subside for as long as a minute before starting again.

As the vibrations persisted, I asked our senior flight engineer if he ever had experienced anything similar in his decades of flying. He gave me a perplexed look and an emphatic, "No sir."

I realized I wasn't the seasoned AC I thought I was only an hour earlier. I directed the 2P to level off immediately so we could troubleshoot and correct the problem. I then solicited ideas and opinions from everyone on the crew, partly due to training and partly because I honestly had no idea what was causing the vibrations. After some discussion, we decided to pull each control-surface boost lever one at a time to bypass the hydraulic system in that flight-control system. If the vibrations stopped while we were boost-out in the elevator, aileron, or rudder, we could pinpoint our problem and leave that control surface unboosted. Unfortunately, the vibrations continued as we tried each control surface.

We then varied our speed to see if the vibrations were airspeed dependent. Again, no luck. The vibrations continued as they had before. While we were troubleshooting, I had been talking with the senior evaluator,

Photo by Matthew J. Thomas. Modified.

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who was soliciting opinions and suggestions from our executive officer at homeplate through a comm relay.

I vaguely had recalled a hazrep that dealt with abnormal vibrations, and I remembered the vibrations were rudder related. Up to this point, our troubleshooting had taken about 30 minutes, and we weren't any closer to determining the cause of our problem. With no quick answer and the thought this problem might be rudder related, we decided to get the airplane on deck. We conducted slow flight checks on our RTB to ensure controllability at lower airspeeds wouldn't pose unexpected problems.

Controllability was normal throughout the check.

Because the source of our flight-control problem was uncertain, we decided to land immediately, rather than burn gas below our maximum landing weight. As I faced my first overweight landing, in an airplane with unexplained violent vibrations, it began to sink in that this flight had become anything but routine.

Our crew briefed the increased approach and landing speeds, calculated our landing ground-roll distance, and discussed the need for a low rate of descent on touchdown. The landing was uneventful, and everyone was more excited about being on the ground than we had been about going to the beach just five hours earlier.

Postflight inspection revealed an alarming situation. The bolts that hold the rudder bellcrank assembly to the rudder-torque tube were loose and approaching separation. This situation allowed the rudder to rapidly oscillate without any control inputs.

Good use of CRM facilitated our troubleshooting through an unusual malfunction and helped us decide that the best course of action was to land. This malfunction also reinforces the value of reading hazreps. As our EP-3 airframes continue to age and experience never-before-seen problems, hazreps are the most effective tool for disseminating this information to the fleet.

Lt.Ashby flies with VQ-2.

This is an exceptional example of how hazard reporting raises awareness, and allows us to make decisions that prevent mishaps.—Ed.