



Dual-Piloted Partial-Panel

You'll always have at least one good set of instruments, right?

Wrong. I experienced "dual-piloted partial-panel" coming back to the ship, under a low ceiling, on a very dark night, and it was no fun.

photo by PH2(AW) Brian McFadden

by Ltjg. Paul Desaulniers

In the East China Sea, we had received immediate tasking to launch on a surface surveillance and control (SSC) mission in our SH-60B. The ceiling was about 3,000 feet with unlimited visibility and forecast to stay that way. We flew 75 miles from home plate and quickly found our contact of interest. We orbited and were tasked to broaden our search for more contacts.

As the pilot at the controls (right seat) for most of the mission, I wasn't happy with my attitude indicator (AI) setting or pedal trim.

My AI did not compare favorably to that of the airborne tactical officer (ATO) or the horizon. I was constantly fighting an internal turn while my AI indicated straight and level, so I decided to make an in-flight AI adjustment. With the aircraft straight and level, nose on the horizon, and ball and turn needle centered, I adjusted it. This seemed to fix things for the moment. We pressed on with the mission but couldn't find other contacts of interest. As night fell and the mission wrapped up, I was still uncomfortable with the informa-

tion from my AI when compared to external cues. Also, the ceiling began to drop, requiring me to descend to stay below it.

I was just about to swap controls with the HAC in the left seat so that he could get some stick time, when an AFCS-degraded caution light on the caution-advisory panel grabbed our attention. We handled the emergency but couldn't reset the numerous associated failure cubes. We tried extensive troubleshooting with negative results and then determined that the ATO's AI had failed.

At 70 miles to the ship, I descended to 1,000 feet to avoid IMC, which barely allowed us to maintain data link with homeplate. The crewman donned his NVGs to see if they made it any easier to fly. When our crewman reported back that it was too dark to see the water, we were committed to returning to the ship partial-panel and unaided.

I hadn't practiced partial-panel since flight school, but took comfort in the fact that I had those hours of training to fall back on. My AI still didn't seem right, and with no outside reference, I had to concentrate on a turn needle-ball scan as the ceiling dropped farther. Because of weak pedal trim, the ball continued to wander off, forcing me to fight through some minor disorientation. The HAC backed up my scan and called out parameters, but the flying was still very challenging, to say the least.

Focused on my instruments, I descended to 500 feet at about 10 miles out. The ship's lights came into view, and the HAC relayed our relative position to the ship. I stuck with my instrument scan because it was too disorienting for me to look up and align myself with the ship's navigation lights. We lined up for an approach, then the ship decided to change course 180 degrees for better winds. After flying around for what seemed like forever, we received updated numbers and a green deck.

We set up for the approach using small increments on the turn needle. It was hard to relax and descend, because the ship was still too far away to go visual. The HAC coaxed me down, but as I looked out to pick up the deck environment, I felt high and fast. I remembered the eternal words of instructors

everywhere: "Wave off a bad approach early." I did.

As I pulled power and banked the aircraft, I was looking at a sea of black. Having transitioned from an instrument scan to a visual scan and back again, I looked down, desperately trying to regain my partial-panel scan. I remembered how difficult it was to fly partial-panel in flight school when the instructor failed the AI, rather than covering it, because the AI is the hub of a normal instrument scan. It was hard to drop the AI out of my scan and focus on partial-panel.

During the first few seconds after waveoff, regaining my air speed on a partial-panel scan provided yet another challenge. We were climbing through 300 feet when I instinctively nosed the aircraft over. I remember hearing the HAC say, "Power, power, altitude!" Up to that point, I had responded well to all corrections he had called out to me. However, at that moment, I failed to heed his sage advice. Fortunately, the HAC maintained his instrument scan during my transition to a visual scan. When I did not immediately respond to his challenge, he took the controls and we climbed out of danger. We leveled off on downwind, with me backing up the HAC's scan. After a few moments, the HAC transferred the controls back to me.

With 800 pounds of gas remaining, we had to make it happen. On this approach, we slowly but surely flew down the glide slope, transitioned to visual for a smooth landing, and shut down. Ahh!

At some point, I'm sure the HAC would have felt more comfortable taking the controls and flying partial-panel himself, but he didn't. He had confidence I'd bring the crew home safe. His actions showed me a lot about leadership in the cockpit and crew coordination. I also learned a lot about my abilities and limitations as a pilot, and how to be a good aircraft commander when the going gets tough.

Troubleshooters found a failed ATO AI, as well as a burned-out electronic amplifier that failed one of the compass-system flux valves. No wonder we had so much trouble with our instruments. 

Ltjg. Desaulniers flies with HSL-43's Det. 8.