

Make a



Decision

By Lt. John Hellmann

“Lieutenant, I think we’re about to lose our aft transmission!” With this ICS call from my crewchief, I was thrust into the definitive helicopter-aircraft-commander scenario. For those unschooled in the transmission system of the venerable H-46 tandem-rotor helicopter, we have two transmissions. They are not backups for each other. Without one, you no longer are flying, or doing much else on this earth. Over water, 10 miles from shore, the question was more “when” than “if” we were putting the bird in the water.

Following the onset of a horrendously loud noise, the crewchief unstrapped and walked aft to investigate. Before getting halfway, a wall of fluid started pouring out the aft-transmission area, and the level of noise increased. He reported this information over ICS and returned forward to prepare for ditching.

I had been here before, in my head. I knew the NATOPS emergency procedures cold. There were seven indications of imminent transmission failure. It may sound hard to believe, but a loud horrendous noise and the loss of fluid were not among the big seven. Furthermore, the NATOPS called for slowing to 65 knots. I wanted to fly

as close to shore as possible since it was only 10 miles away. At 65 knots, it would take 10 minutes. The question was how much time was available before we had to put it in?

My prepared answer was easy: I would wait for a secondary indication from the big-seven list. In the cockpit, though, a string of doubts entered my head. All the sea stories about the crews who tried to stretch out that last mile, only to plunge into the ocean on short final, raced through my mind. Whenever I heard about those ill-fated crews, I swore it never would be me. I would be smart enough to put it in the water while I still could.

I went with my plan to wait for one more indication, and my gut instinct said it was not yet time for a swim. We were 10 miles from land, and flying at 65 knots was going to double our time over water. Once the fluid was gone, there was no telling how long the transmission might work. With this logic and with the entire crew agreeing, I deviated from NATOPS. Speeding up to 120 knots and making a beeline for the runway, I declared an emergency. The copilot and crewchief completed the ditching checklist, and each of us hawked the transmission gauges for the next five minutes.

Two miles short of the runway, two caution lights illuminated and extinguished. However, they were not transmission lights. They were the control boost and No. 2 automatic-flight-control system (AFSC) caution lights. We all breathed sighs of relief when we realized our problem was not the transmission. All I could think was, "How could I be having two major failures at the same time?" None of us even thought to read the hydraulic-pressure gauges.

I executed a running landing and shut down on an adjacent helicopter pad. Following much cursing of the wretched aircraft that tried to take our lives, we walked to the aft-cabin area and saw hydraulic fluid.

We had misdiagnosed the emergency to the point of almost ditching. Even though we had discussed the situation and unanimously decided on a course of action, we had been wrong in our analysis. From the start, we had focused on the transmission, never considering a different possibility. When the crewchief heard the noise and saw fluid, he assumed it was from the transmission. When faced with conflicting information on the caution panel, I ignored it.

Further investigation on deck revealed our utility-hydraulic reservoir was empty. The noise came from the cavitating hydraulic pump. We failed to address the dangers associated with a failed utility-hydraulic system. Had we started our hydraulic-driven auxiliary power unit, as called for in the ditching checklist, we would have aggravated our situation with a possible APU fire. Had we flown at 65 knots as called for by NATOPS, we would have doubled our time over water and risked a fire or loss of hydraulic control. Had we ditched due to imminent transmission failure when we still had more time to fly, someone might have died.

We tried to find a bright light in our mistake. We had

taken limited information and made a life-and-death decision. This is what we are trained to do. Had it been an actual transmission problem, we were prepared. Thanks to simulator training and qualification boards, I had a plan of action and followed it. I stuck with what I knew, which was to watch for secondary indications. For now-obvious reasons, there were none.

My copilot, with a whopping 17 hours in model, was the first to identify the faint unusual noise. Even though he was the only one to hear it, he persisted until we knocked off the training scenario. This led to immediate action with the onset of the clearly audible howl.

Paradoxically, my assertive copilot was not prepared for ditching. As he executed the ditching checklist while I flew us in, he missed step two, which called for the starting of our hydraulic-driven APU. This omission saved us from an APU fire. We falsely had diagnosed an emergency of greater severity than the one actually at hand. Deterioration of the hydraulic system could have resulted in us ditching the aircraft, just not so soon.

There is little time to think and discuss a plan of action when the ocean is getting closer and closer. Even when we do not have the complete picture, we still have to make a decision. 

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