

---HSL-49

SH-60B

Fuel Dump Runaway

By LCdr. Ron Finch

It was a beautiful San Diego afternoon, and my crew was conducting a full systems “A” profile functional check flight in an SH-60B. The aircraft had not flown in a few months and underwent considerable depot level maintenance. We had completed another set of vibration analysis runs over the Pacific Ocean and decided it was time to go back for adjustments. With the exception of more vibrate runs, we had one more in-flight check to do – a fuel dump check.

We were about 15 miles off the coast, and I briefed that we would turn west and climb to 6000 feet for the check. 6000 feet allows the fuel to atomize before reaching the ocean surface. We could not proceed closer to land due to Class B airspace constraints. We took out the fuel dump checklist and briefed the steps. Upon reaching our altitude, we had 3150 pounds of fuel and would secure the dump switch at 3000 pounds. At a dump rate of 836-1000 pounds per minute, this would not take long.

The crew knew exactly what was to happen, so at 6000 feet, my copilot threw the fuel dump switch. We watched the fuel quantity readout drop from 3150 to 3000 in a few seconds, then secured the switch. Our fuel quantity seemed to stabilize, so I turned back towards land at 20 miles and began descending. After about a minute, I smelled fuel, then looked at our fuel gauge – 2690 pounds. I am no math expert, but I knew this did not make sense. I checked the fuel dump switch to confirm it was secured. It was. I alerted the crew to the fact that we were now in a scenario that I thought only happened in the simulator.

My copilot was our squadron Safety Officer with a lot of H-60 experience. In accordance with our emergency procedures, he promptly pulled the fuel dump circuit breakers. Dumping continued at a rate of about 400 pounds per minute. For the first time in 12 years of flying, it occurred to me that this situation was a culmination of all the training I had, from a nugget to senior department head.

We were 16.5 miles from NAS North Island when I declared an emergency with tower. We were cleared direct, then my copilot saw a frigate about 2 miles to our south and recommended we divert to the ship instead of trying to make the beach. I turned toward the frigate and cancelled with tower, informing them of my intentions to land on the ship. While I was talking with tower, my copilot had already established communications with the ship on Bridge-to-Bridge Channel 16. I perched in a high hover off the stern of the ship while we tried to communicate our emergency. After what seemed like an eternity, I flew slowly up the port side, rocking my wings, so that the bridge could see the helicopter dumping fuel. I then turned back to the stern and reestablished a high hover.

The frigate was inbound to port and had mooring lines faked out on the flight deck. All flight deck nets were up. Suddenly, what seemed like half of the ship's crew poured out onto the flight deck to clear the lines and lower the nets. The rate at which they were clearing the flight deck assured us that we were going to be safe.

Time compression in moments like this made me feel like this took forever, but the ship fully set emergency flight quarters in 1 minute 48 seconds. At 900 pounds and still dumping, I flew the aircraft down to a safe landing.

I learned a lot from this situation. I learned that the fuel dump valve in this fuel system requires electrical power to open and close. The wire that provides power to close had been severed. I learned that the NATOPS fuel dump emergency procedure does not cover a stuck open fuel dump valve. The pump had secured, but fuel was siphoning out through the open valve. Sound judgment was all that was left.

Most importantly, I learned that CRM played an invaluable role in the successful handling of a potentially catastrophic emergency. With heightened senses and situational awareness, my copilot and I were able to actively communicate with each other, splitting up the tasks as appropriate. The result was smooth information flow in the aircraft, as well as with the ship. Armed with the right information, the ship responded expeditiously, and saved an aircraft from being lost at sea.

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