

Lethal Load

An SH-3G *Sea King* helicopter was at a land base preparing to transport a large load of passengers and cargo to a ship at sea. The load exceeded the aircraft's gross weight by 1,000 pounds. The pilot executed a long, running takeoff in order to get airborne.

The *Sea King* made it into the air and proceeded toward the ship. The helo approached the landing area on the aft end of the ship and attempted to enter into a hover. As it did so, the rotor rpm began to droop. The power required to hover exceeded the power that was available.

The helicopter fell toward the ship, striking it belly first in an extremely nose-high attitude. The *Sea King* then rolled into the water and sank. The pilot, copilot, and two others were killed. Five other people were injured but survived.



Grampaw Pettibone says:

Gol dang it! The *Sea King's* been around for a long, long time and served us well. But it can't do the impossible.

The pilot in command was highly



regarded for his airmanship skills but according to the investigators, rarely used the charts to calculate aircraft performance factors. The copilot was his close friend and they had flown the last 15 missions together.

They most certainly had confidence in each other.

But they didn't consult performance charts prior to the hover to make sure the SH-3 was within parameters – which it wasn't. The flight, therefore, ended in tragedy.

Fleet operations during this time

were hectic and demanding. But short of saving a life under desperate circumstances, there just ain't no excuse to cut corners when flying the Navy way. Your bird can only give you just so much. You've got to draw the line somewhere, and performance charts and Naval Air Training and Operating Procedures Standardization point the way.

Phantom in a Frenzy

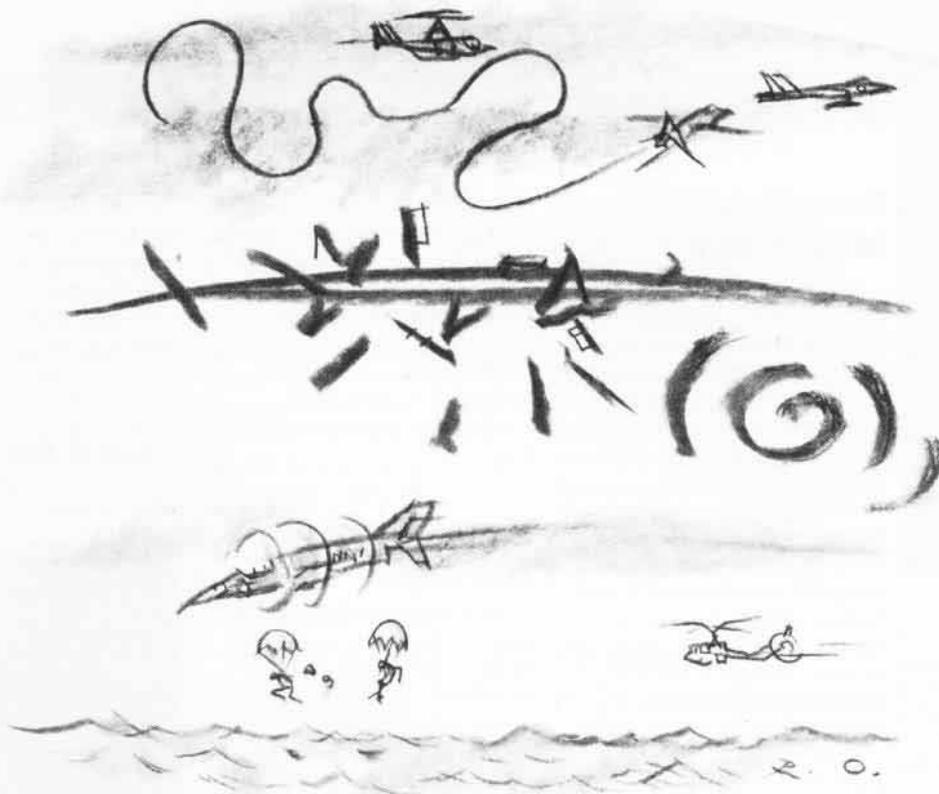
A section of F-4S *Phantoms* were over water practicing ship attack maneuvers, high G turns, and air refueling. After two hours and 50 minutes airborne, the wingman reached Bingo fuel and returned to base. The lead *Phantom* stayed on for a final "attack" under E-2C *Hawkeye* control. During the run, the F-4 was vectored toward two FA-18s and began a climbing intercept at 400 knots. After passing the first *Hornet*, the F-4 commenced several check turns looking for the second. Subsequently, the *Phantom* turned toward home base.

About a minute later, the pilot detected an FA-18 at four o'clock, moving away. The pilot of the F-4 made a 90-degree level right turn in afterburner, pulling four Gs at 325 knots with 18 to 20 units of angle of attack. In the turn, the *Phantom* entered a left, 360-degree uncommanded roll. The pilot countered the roll with right lateral stick and recovered, wings level, 30 degrees nose low, at about 325 knots.

The aircraft was now in a right skid (left yaw). The pilot thought that the ailerons or spoilers were not functioning properly. He scanned the cockpit, saw the ball pegged to the right, with rudder pedals stiff. He tried to push on the right rudder pedal but there was only a small amount of movement and the ball remained full right.

The pilot asked the radar intercept officer (RIO) to visually check the flight surfaces and simultaneously depressed the emergency disengage switch. He also disengaged all stabilization augmentation switches, ensured hydraulic gauges were at





3,000 pounds per square inch, and checked circuit breakers.

The RIO confirmed the skid and visually checked the rudder out to the left. The pilot declared an emergency and planned an arrested landing at the airfield. The pilot and RIO then reviewed the checklist for "uncommanded spoiler extension" and "hardover rudder."

The crew checked the slats, ailerons, and spoilers. The RIO told the pilot that the left aileron was down and the right spoiler up, with the rudder off to the left.

The pilot ran rudder trim full right without effect. Remembering past experiences of cross-controlling in the F-4S, he believed he had a spoiler/aileron malfunction in addition to the known rudder problem.

The pilot decided to lower the gear and flaps to check controllability in the landing condition. The pilot and RIO did not talk about the need to trail the rudder following the controllability check by failing the utility system. This procedure was on the checklist. The pilot figured if disengaging everything didn't stop the problem, he would intentionally fail the utility system. At this point, the aircraft was at 9,000 feet, 250 knots.

At about 6,000 feet and 230 knots, the pilot lowered the gear and got a "down and locked" indication. But as the gear came down, the nose pitched up and the *Phantom* rolled to the left.

The pilot applied full right aileron and pushed on the right rudder pedal as hard as he could, but the aircraft continued to roll left. Realizing he could not stop the roll, the pilot raised the landing gear handle. The plane completed a 360-degree left roll to wings-level, nose-low attitude. The pilot applied full right aileron, which had no effect. The *Phantom* continued into a second roll to the left. The RIO placed his hand on the lower ejection handle and noted that the left aileron was down and the right spoiler up with rudder still deflected left. He saw 3,000 feet mean sea level and 220 knots but didn't say anything to the pilot.

The pilot went to full afterburners, increased back stick, and saw airspeed at about 225 knots. The aircraft continued into a third roll, nose down. The pilot disengaged afterburner and set power at idle. The *Phantom* corkscrewed at 70 degrees nose down and the pilot could see only ocean. He fed in back stick but felt the *Phantom* stall. The stick was "mush" in his hand. At 2,000 feet, he transmitted, "Get out, get out, get out."

Both aviators ejected safely, but the pilot's head was thrown back as it entered the windstream and his helmet and mask were lost. His mask had been secured on only one side of the helmet. Both aviators were rescued by helicopter.



Grampaw Pettibone says:

That was some wild ride!

The investigation couldn't retrieve the wreckage of the *Phantom* but the culprit is believed to be hardover rudder, not spoiler or aileron problems. So a mechanical breakdown set this accident in motion.

But the crew shouldna let the *Phantom* slow down below minimum controllable airspeed with the flight controls actin' up like they were. That just added fat to the fire. Plus, the aviators had trouble decidin' what their real problem was. Also, a controllability check oughta be conducted well above 5,000 feet. Not much room for error when you're that low if things go bad, as was the case here.

There were some other drawbacks, such as possible conflicting Naval Air Training and Operating Procedures Standardization practices, which were addressed by officials. And Ole Gramps woulda liked to see the pilot and RIO help each other out a bit more with the pressure on. A better exchange of info, such as altitude and airspeed, as they got closer to water wouldna hurt.

Anyway, they survived a tough one. (And keep that O₂ mask cinched up right!)