

Illustrations by *Ted Wilbur*

Tomcat Foolery

An F-14 *Tomcat* launched from the carrier on a functional check flight, which entailed conducting a negative-G check. During the briefing, the pilot stated he wanted to remain wings level, pull about 30 degrees nose up and then push over, instead of rolling the aircraft into an inverted and wings-level attitude to commence the check as called for by test procedures and Naval Air Training and Operating Procedures Standardization (NATOPS).

At 25,000 feet and .7 indicated Mach number (IMN), the pilot raised the nose 20 degrees above the horizon, bunting it just a bit to let it stabilize, then started the unload. Initially, he felt the unload was insufficient to get a good negative-G check; his helmet was touching but was not being pressed against the canopy as he had expected. Similarly, the radar intercept officer (RIO) felt the unload was less than one negative G because he was able to pull himself down into the seat with one hand.

The nose of the F-14 was 10 degrees above the horizon and coming down when the aircraft rolled fast to the left. The pilot recognized the abnormal movement and as the aircraft reached 60 degrees left angle of bank, slightly nose low, he applied right stick to counter the roll. He was also holding constant forward stick. He then removed his hands from the stick because the aircraft was not responding to his inputs.

The *Tomcat* continued to roll left and as it passed through 90 degrees left wing down, the pilot reduced throttles to idle. The F-14 departed and entered a spin. About two seconds transpired from commencement of the roll to departure into the spin. Initially, the crew felt it was in an upright spin due to the F-14's attitude prior to the departure.

"We are inverted," the pilot transmitted, "AOA's [angle of attack] all black, stick's back." The turn needle was pegged full left. Altitude was 23,000 feet.



The pilot put in full aft stick and full right rudder. The airspeed needle moved swiftly toward zero. An electrical surge followed and the left stall light came on but without an associated tone. The crew was experiencing about two negative Gs at this point. The spin arrow

appeared on the tactical information display. Direction of the spin was difficult to determine due to sun shining on the instruments. Electrical power—and communications—were then lost. The airspeed needle remained pegged on zero. Altitude was now 15,000 feet.

Passing 10,000 feet, the RIO jettisoned the canopy and initiated ejection, which was successful for both flyers. The aircraft crashed and sank in the sea.



Grampaw Pettibone says:

My achin' back! What's all this freelancin' about?

NATOPS sez the negative-G check should be performed at 25,000 feet, .75 IMN, in an inverted, wings-level attitude. The pilot briefed he would perform the check upright with a pull-up followed by a negative-G pushover.

After the accident, the pilot said he had heard about the entry procedure while talking with pilots in a previous



command a couple of years earlier, but couldn't remember exactly when or with whom!

Turns out the pilot's reasoning was based on a misinterpretation of a 1986 mishap in which he believed a departure occurred using the inverted entry for the check. However, that departure occurred during a pushover maneuver. The pilot had also expressed a desire to avoid the unusual attitude of being inverted. The pilot believed the upright pushover was less dynamic. But investigators noted that the upright pushover is more dynamic in that it involves a higher pitch rate than the standard maneuver. The upright maneuver also leads to application of negative G at airspeeds below the prescribed maneuver, allowing stall at lower negative-G loads.

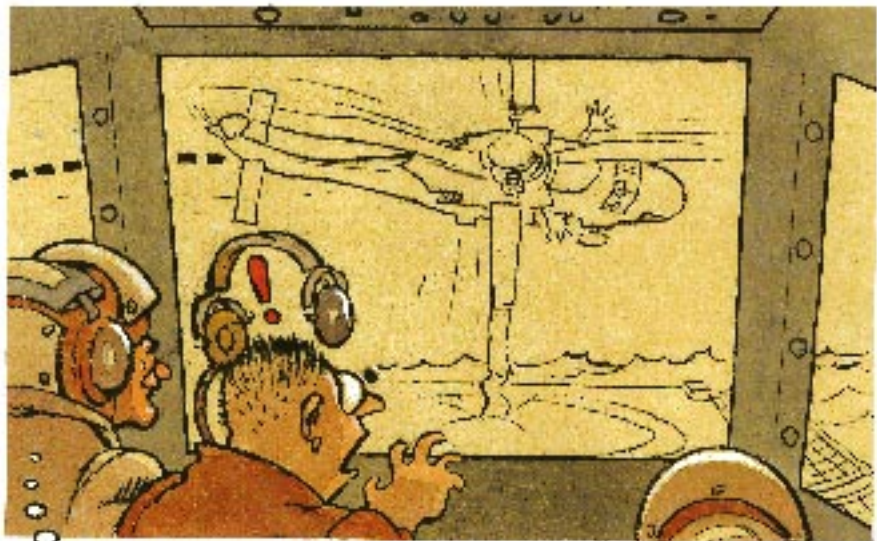
The higher airspeed and lower pitch rates inherent in the NATOPS procedure would have allowed a greater margin of resistance to departure. And for the life of Ole Gramps, why did the RIO go along with this nonstandard method? Had he spoken up, that F-14 might still be in the inventory.

By the way, NATOPS states "recovery from an inverted stall is performed by applying full aft stick, while neutralizing lateral stick, to return to positive-G flight. Recovery from negative-G conditions will usually occur immediately."

Turn and Tip

After launching from the ship, an SH-60B *Seahawk* was asked by controllers to visually identify three contacts near the helo's flight path. While approaching the contacts, the aircraft descended below the squadron's altitude minimum of 50 feet over the water. Sea state was two to four feet. The copilot expressed concern, but the pilot continued descent to 10 feet with airspeed approximately 110 knots. The copilot questioned this additional descent and the pilot climbed to 30 feet.

Noticing a large oil rig, the pilot jokingly asked if they should fly under it. The copilot said they should not and the pilot turned the *Seahawk* toward the frigate, increasing altitude. Several miles from the ship the SH-60B descended again, well below 50 feet. The copilot cautioned the pilot that this was too low. One of the crew members transmitted, "This isn't low. I've seen wheels in the water." The copilot



Where do we get such men...

responded, "No, we don't want to see wheels in the water."

When the sensor operator stated the helo was at 10 feet, the pilot replied that it was just a wave that caused the low reading on the radar altimeter. Subsequently, the sensor operator asked the passenger if his Servicemen's Group Life Insurance (SGLI) was paid up. The copilot offered that his wife would be able to buy the car she wanted with the insurance money. The copilot felt that the pilot took it as a challenge to go lower every time something was said about being too low.

The contacts were identified and the *Seahawk* continued to the ship. The pilot approached the frigate from a point 30 to 40 degrees forward of the starboard beam, intending to make a perpendicular pass aft of the flight deck. Moments later, however, the pilot made a sharp right 40-degree angle-of-bank turn into the ship. The maneuver startled the copilot who anticipated the flight path to place the helo aft of the ship by 50 yards. Instead, it was aimed at and nearly over the aft end of the ship. The copilot yelled, "Power! Power!" just as the first main rotor blade struck a glancing blow to a deck net frame before it impacted the side of the ship, tearing off nine inches of the blade's tip cap. The second blade swept the flight deck, bending and buckling the tip cap, although it remained intact.

The sensor operator called a mayday and requested emergency flight quarters. The *Seahawk* climbed to 100 feet. The copilot remarked that the aircraft behaved as if it were experiencing a rotor damper system failure. Never-

theless, the pilot retained control and landed without further damage to the *Seahawk*.

Grampaw Pettibone says:

These folks are lucky they didn't get deposited into the deep six—for eternity. The pilot was noted for flying too low on past flights, and a safety standdown prior to this mishap addressed such hazards. Didn't matter. He kept up what the accident report called "risky business," another phrase for "flathatting."

In defense of the pilot, he'd been in a cumbersome exposure suit for over six hours, had been at the controls for 5.7 of the 6-hour flight, and for nourishment he'd consumed only two bags of chips and a soda. Fatigue + overconfidence + heavy workload + lack of crew coordination = deadly combination.

Naval Aviation is no stranger to dark humor. The jovial references to SGLI and buying cars with the insurance settlements will probably always be with us. What worries Gramps is how close these folks came to doing themselves in. That steep turn across the tail end of the frigate musta been somethin' to see—much less live through.

And skimmin' along the wave tops, as this *Seahawk* was, is tradin' peril for thrills. 'Tain't worth it. Never is.