

Cotter Pin Calamity

The pilot of an NA-4F Skyhawk launched from NAS West Coast on a post-maintenance check flight. He was at 1,600 feet and 420 knots when he retarded the throttle from near military rpm. Power didn't change, however, and rpm remained at 97 percent. The pilot returned the throttle lever to its previous position and again attempted to reduce rpm by easing the throttle back. This time the engine responded normally.

Realizing he had a problem, the pilot set rpm at 80 percent and requested a visual straight-in approach to the field from which he had just taken off. A minute later, the pilot moved the throttle slightly to check engine response but the power plant did not respond. (Automatic power control was not installed in this aircraft and, therefore, could not be utilized to regain control of the throttle.) The pilot decided to hold briefly nine miles from the field and assess the situation. He reviewed NATOPS (Naval Air Training and Operating Procedures Standardization) stuck-throttle procedures and then began the approach.

As he turned onto the final heading, the engine flamed out. The pilot ejected and was recovered safely. The aircraft was destroyed in the subsequent crash.



Grampaw Pettibone says:

The Skyhawk has been around longer than some of the folks who fly 'em. But like any aircraft ever built, it can let you down if you don't give it plenty of tender lovin' care – meanin' MAINTENANCE BY THE BOOK.

Investigation revealed that the PCCRN (power control crank retaining nut) cotter pin was missing when the aircraft left the ground. Except for the PCCRN, the entire throttle linkage system in the Skyhawk is redundant. Without that nut, though, the linkage can slip and the throttle lever no longer manage the fuel control position. The fuel control thus becomes free to float anywhere between 100 percent and zero rpm.

Pilots are supposed to "check



throttle rigging condition and security" on preflight, but NATOPS doesn't mention the retaining nut specifically.

Three weeks prior to the mishap, the engine was removed for inspection. The maintenance instruction manuals require disconnecting the throttle linkage by removing the two nuts at either end of the engine power control crank. Instead, the nut at the center of the control crank, the PCCRN, was removed – contrary to procedures. Turns out this was common practice among Skyhawk

squadron power plants personnel to facilitate engine removal, testing, and reinstallation.

It gets more complicated from here on. The engine went through a couple more evolutions, and along the way there were "verbal passdowns" regarding reinstallation of the pin. Individuals "assumed" that others would take care of it. There was no paper audit trail. Thus, for lack of a simple cotter pin, a bird was lost and a pilot had to punch out.

Ole Gramps doesn't like the idea of an inexpensive cotter pin bein' so dang important to the safe operation of the aircraft. But it was and is. So, until we improve the system, better go by the book, step by step, whenever we take flyin' machines apart and put 'em back together again.

Latch It or Lose It

During preflight of a TAV-8B, the instructor pilot (IP) and pilot under instruction (PUI) observed light frost on the Harrier's windshield. Outside air temperature was 31° F. The plane captain's attempts to remove the frost were unsuccessful due to high humidity in the atmosphere. The frost reformed after removal because of the



*for lack of a nail
an entire kingdom was
once lost!*

below-freezing temperature and the moisture.

The PUI, in the front cockpit, was uncomfortable with his direct-forward visibility due to the light frost. The decision was made for the IP to make a conventional takeoff. His visibility was adequate since the rear cockpit was slightly stepped up from the one in front.

The *Harrier's* takeoff roll was normal until reaching 95 knots when the rear canopy opened in the airstream and flew off. The IP successfully aborted the takeoff, but pieces of the canopy and its frame struck the right wing leading edge and fiddled the engine.

As the aircrew taxied clear of the runway, the canopy light was not illuminated, even though the rear canopy was gone.

Investigation revealed that the IP had engaged the canopy handle forward to the latched position but did not fully close and lock it. Instead, he rested the canopy locking mechanism hooks on top of the canopy locking mechanism retainers. The warning light didn't come on because the rear canopy microswitch froze in the closed position, falsely indicating to the pilot that the canopy was closed and locked.



Grampaw Pettibone says:

Little things mean a lot. 'Cause the microswitch froze, there was no red light to tell the IP somethin' was amiss. He made the movements of closin' and lockin' the clamshell, right and proper. The canopy sat on those retainers instead. Twas only a matter of millimeters in distance, but it cost a canopy and an engine.

Details, folks. Naval Aviation is a matter of masterin' 'em.

Seasprite Sacrilege

An SH-2F *Seasprite* was on a passenger transfer and antisubmarine warfare (ASW) training mission with added duty as plane guard for a USMC Zodiac operation originating from the parent surface ship. After completing the passenger transfer and ASW portion of the flight, the



Seasprite was cleared to fly between 100 and 200 feet altitude for plane guard duty.

The helo made several low, fast passes by the ship, one of which featured a sliding, 90-degree stopping turn to face the bridge. The C.O. gave a positive hand gesture to the helo and told the phone talker to pass the word to CIC (combat information center) to advise the *Seasprite* they were looking good but (not verbatim) "it was too bad they couldn't do a loop."

The message, when relayed to the pilot, came out (not verbatim) that "the captain was enjoying the air show and he'd like to see a flip."

The pilot responded to the effect that H-2s were incapable of doing a flip – the last one to try had to replace every revolving part. He added that when he got lighter, the ship might see something special.

A little later the *Seasprite* crossed the ship port to starboard about 60 feet above the water and proceeded 1,000 yards beyond it. The pilot then made a nose-high climb, estimated at 75 degrees, with an estimated 90-degree right turn leading into a steep, nose-down descent. The *Seasprite* flattened out approaching the water and slammed into it with slight nose-down attitude. The aircraft disappeared from

sight and never resurfaced.



Grampaw Pettibone says:

There lives a demon inside just about every Naval Aviator. The demon's best friend is temptation. Most fliers are stronger than the demon and keep him in place. Temptation's not such a bully when his best friend ain't around.

The demon loves to flathat and when that rare Naval Aviator gives way to the demon and temptation hitches on for the ride, trouble comes in spades.

This *Seasprite* pilot had a history of wrappin' the helo around, often unannounced, beyond its NATOPS (Naval Air Training and Operating Procedures Standardization) – not to mention aerodynamic – limits. One copilot told him to knock it off. Others, over a period of time, kept quiet. In this case, the ship's C.O. didn't help matters. But the true responsibility sits on the pilot's shoulders.

Too bad the demon and his pal don't show up on brain x-rays. Until we figure out how to do that, be leery of the likes of fliers who are inclined to show off at somebody else's expense.