# GRAMPAW PETTIBONE

## Spinning Sea Dragon

An MH-53E *Sea Dragon* departed an overseas shore base carrying an F404 engine in its metal container. The helicopter had a hydraulic leak in the right main mount brake, which was known to the day-check leading petty officer and an aircrewman aboard the MH-53E, but not to either of the pilots. Earlier, on board a carrier, the aircraft's parking brake had slipped off twice while loading the engine into the helo's cargo bay using the cargo winch.

Landing without incident at the destination, the pilot taxied onto a parking apron, set the parking brake, then transferred control to the copilot. The pilot may have left other-than-neutral control inputs on the helo when he made the transfer. Additionally, chocks were not placed on the main landing gear.

The leak in the right brake caused the brake pads to disengage, but the left main landing gear brake remained pressurized. The parking brake slipped off again and the left brake released slowly due to a pressure restrictor on the hydraulic line. The aircraft began to move because the flight controls were not neutralized. The asymmetrical distribution of braking allowed the helo to pivot on the left main landing gear until pressure was completely gone from the left brake. Then, the left main landing gear started rolling backward, in effect accelerating the turn.

The copilot did not apply the brakes right away because he assumed the command pilot would handle them as he had earlier in the day. When the copilot did apply brakes, the right brake pedal laid down flat because of the leak. The copilot then applied left yaw pedal, which helped little.

At this moment, wit-



Don't try this one at home, Folks!

nesses heard a sound which was attributed to a change in the pitch of the tail rotor. The helo accelerated rapidly after 90 degrees of turn. After 270 degrees the engine can, still attached to the helo's cargo winch cable, slid out of the fuselage and was dragged across the concrete. It hit a tow tractor and fatally struck the helo's aircrewman, who had been ejected at nearly the same time as the engine can. The aircraft continued to spin, and the cargo winch cable snapped after 1.2 turns. The pilot took control of the helo but could not slow the turn with the right pedal. He concentrated on keeping the aircraft level and in position on the parking apron. He added left pedal, believing that would prevent the helo from rolling over and from hitting other obstacles on the

apron. The helo's refueling probe struck the engine can at 1.5 turns and again in the fourth turn. The helo completed a little over five turns and came to a stop when all of the engines were shut down.

The entire evolution took between 15 and 20 seconds.

**Grampaw Pettibone says:**

Toss in enough of the wrong ingredients and the stew will surely turn sour.

The aircrewman failed to pass on the brake discrepancy to the pilot in command. The pilot applied a combination of flight control inputs prior to setting the brake which allowed the helo to move on the ground. The copilot failed to reset the parking brake after it released. The copilot inadvertently aggravated the left turn by applying left pedal. The pilot failed to react to the emergency in a timely fashion. Aircrew coordination took a holiday. A Naval Air Training and Operating Procedures Standardization brief, including emergency procedures, was not conducted. And why wasn t the helo chocked?

Inaction, improper action and errors in judgment transformed this helicopter into a
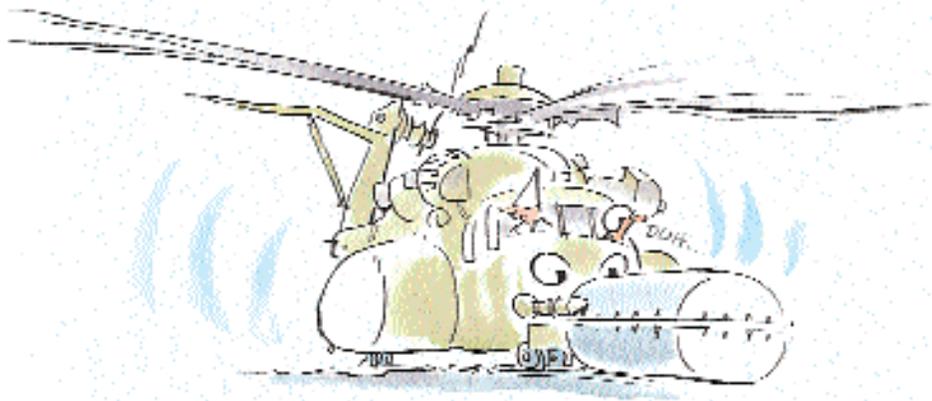
whirling dervish with fatal consequences.

## Canyon Catastrophe

A flight of two F/A-18 *Hornets* was on a two-fold training mission: one part dissimilar air combat training (DACT) and the second, low-altitude training. The day before, the squadron XO had briefed the fliers on the hazards of low-level flights and covered flight through canyon areas, emphasizing the danger of such flights close to the ground.

One pilot was the lead, under training, while the wingman was the mission commander. The DACT portion of the mission was completed without incident. Subsequently, the lead pilot determined the flight did not have sufficient fuel to return to base as briefed, which meant curtailing the low-level route. To conserve fuel the leader flew along the initial portion of the low-level route at 5,000 feet and 250 knots. When the low-level route intersected the canyon portion of the flight, lead descended into the low-level environment.

The mission commander lost sight of the leader as the flight commenced the route. Approxi- mately one minute later, the mission commander observed a bright flash ahead and low on the canyon s left wall. The flash then changed to what was perceived as a fireball followed by thick black smoke. The *Hornet* had crashed. The pilot was killed, the aircraft destroyed.

Investigators determined that the F/A-18 struck the canyon wall about 75 feet from the edge of a sloping ridge line in a high-G, high-angle-of-attack, right banked turn. There was no evidence of engine or systems failure, nor any sign of an ejection attempt.

**Grampaw Pettibone says:**

**Shouldn ta happened, but it did, so learn from it. The lead pilot s *Hornet* was in a hard right-hand turn within the confines of the canyon** walls, and he either did-n t see the ridge line approaching or did not realize his flight path was below it. It s also possible that he became aware of the ridge line too late to avoid it.

Would it have helped if the flight had practiced low-level maneuvers over less hazardous terrain before descending into the canyon environment? Maybe. The investigators did conclude that the lead pilot had insufficient low-level flight experience for operating in a canyon area. Plus, he hadn t had enough rest before the mission. He was an extremely motivated aviator but considered by some to be overconfident. Not a good combination for pilots flying high-performance aircraft fast and close to Mother Earth.

Seniors in the chain of command, including the mission commander, could have exercised better judgment in handling the preparation for this flight.