

UNITED STATES DEPARTMENT OF THE INTERIOR
OFFICE OF AIRCRAFT SERVICES

SAFETY ALERT

No. 03-01

August 16, 2003

Subject: AS 350 Series Hydraulic Accumulator Test

Area of Concern: Aviation Operations

Distribution: All Aviation Personnel

Discussion: The Forest Service published USFS Aviation Safety Alert 2003-12 (AS 350 Series Hydraulic Accumulator Test) following an Incident With Potential that identified a recurring problem with the collective pitch locking mechanism in AS 350 Series helicopters. The locking device has disengaged on at least two occasions while the pilot was performing the hydraulic accumulator test. In the most recent case the pilot and operator were aware of, and followed the previous recommendations in USFS Safety Alert 2003-06. The pilot had his left hand positioned to guard the collective in case of an inadvertent release during the test as recommended in the previous Safety Alert. After successfully completing the hydraulic test, the pilot reached up with his left hand to re-engage the hydraulic system and it was at this time that the collective locking device inadvertently released and the collective visibly jumped up and the aircraft became airborne with little or no hydraulic assist to the flight controls. The pilot was able to recover the aircraft, stabilize it in a hover, then re-engage the hydraulic system and make a normal landing. Inspection revealed no significant wear on the hold-down stud (locking plunger) in this particular case but rather that a small amount of play in the collective allowed the locking mechanism (lock plate) to release.

Recommendations:

1. Anytime a hydraulic accumulator test is performed on an AS-350 series aircraft the pilot will be the only person on the aircraft until the procedure is completed, the hydraulic system is re-engaged, and the pilot has positive control of the collective. It is recommended that all personnel remain at a sufficient distance from the aircraft to ensure their safety until advised by the pilot to board the aircraft.
2. All AS 350-series helicopter pilots, operators and helicopter managers should be advised of the potential for the collective lock plate to become unlocked during the hydraulic test procedure due to cyclic feedback to the collective.
3. Pilots and Mechanics should inspect the hold-down stud (locking plunger) attached to the end of the collective for excessive wear and ensure that the collective pitch lock plate is adjusted to AS-350 maintenance manual specifications to ensure that all potential downward travel of the collective is eliminated when locked down.
4. Pilot Inspectors advise all pilots of AS-350-series helicopters that inadvertent release of the collective pitch lock plate has occurred during the hydraulic accumulator test and that guarding of the collective is strongly recommended.

/s/ Robert Galloway

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