

**United States Department of Agriculture
Forest Service
Aviation Safety Alert**

No. 2003-12

August 14, 2003

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Subject: AS 350 Series Hydraulic Accumulator Test

Area of Concern: Aviation Operations

Distribution: Aviation Operations

Discussion: A recent Incident With Potential (IWP) has again identified a problem with the collective pitch lever locking mechanism in AS 350 Series helicopters. Indications are that the locking device, disengaged while the pilot was performing the hydraulic accumulator test. The pilot and operator were aware of, and followed the previous recommendations in Safety Alert 2003-06. The pilot had his left hand in position 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, with some difficulty, and stabilize it in a hover and then re-engage the hydraulic system and make a normal landing. Inspection revealed no significant wear on the hold-down stud, (Part # 350A-27 3455-20) in this particular case.

Recommendations: Adhere to the previous recommendations listed below as items 2-4 from Safety Alert 2003-06 **plus the following addition to item # 3 and the new recommendation #1:**

- 1. Anytime a Hydraulic Accumulator test is performed, the pilot will be the only person on the aircraft, until the procedure is completed and the hydraulic system is re-engaged, and the pilot has positive control of the collective. Crewmembers waiting to board the aircraft will remain at a distance sufficient to ensure their safety, until advised by the pilot to board the aircraft.** (Safe distance needs to consider a worse case scenario if something goes wrong and the main rotor blade should impact the ground, creating flying debris hazard)
2. Advise all AS 350 Series helicopter Pilots, Operators and Helicopter Managers of the potential for the collective pitch lever lock to become unlocked during the hydraulic test procedure due to cyclic feedback to the collective.
3. Pilots and Mechanics inspect the hold-down stud attached to the end of the collective for excessive wear **and assure that the hold-down mechanism is adjusted properly to assure that all potential downward travel of the collective is eliminated while locked down.**
4. Pilot Inspectors advise all pilots of this Series helicopter that inadvertent releases of the collective pitch lever, locking mechanism have occurred and that the guarding of the collective during the hydraulic accumulator test is recommended.

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