



Department of the Interior Aviation **SAFETY ALERT**

No. DOI SA 25-02

May 1, 2025

Page 1 of 2

Subject: DeHavilland DHC-2 Beaver Ignition Interlock

Area of Concern: Propeller Safety

Distribution: All Fixed Wing Aviation Operations

Discussion: A recent [SAFECOM \(25-0323\)](#), highlighted a serious hazard that could potentially result in an inadvertent engine ignition and personnel propeller strike. In the event described in the SAFECOM, the pilot was about to perform the propeller pull-through on a DHC-2 Beaver as part of the preflight process, when he decided to check the ignition a second time to ensure it was in the OFF position. Although the keys were not in the ignition, the ignition switch was set to the right magneto and could have resulted in an engine start during manual propeller rotation. Additionally, the pilot was able to insert/remove the ignition key from each position, which is an indication that the mechanical interlock that prevents the key from being removed when the ignition system is not grounded (still hot) was not functioning. The aircraft was removed from availability and the ignition switch was removed and replaced. The pilot stated that he did look at the ignition when he preflighted the cockpit, but the angle from where he was viewing it made him believe that it was in the “OFF” setting. The image below was taken immediately following the event and provides another view of the ignition switch during further examination.



Airplane ignition systems are designed so that the key must be in place for the ignition to be moved to the START, RIGHT Mag, LEFT Mag, and BOTH positions. A properly functioning interlock system is designed to prevent the key from being removed in any position but OFF. Over time, the key holes can become worn and interlocks may malfunction. If a key falls out of the ignition or is loose, it's time for maintenance to evaluate it. Even with the ignition, battery, and master switches in the OFF position, the

engine could accidentally start if the ground wire between the magneto and the ignition switch becomes disconnected or broken and the propeller is manually moved with residual fuel in the cylinder.

The following recommendations are provided to prevent inadvertent engine start/propeller strikes during pre and post flight inspections or other ground activities:

1. Treat all propellers as “hot”. Stay clear of the propeller arc at all times. Engines can start inadvertently if the ignition ground wire is broken, even if the switch is in the OFF position.
2. Never assume that the keys are out or that the ignition is OFF. Before any ground procedures near the propeller, **confirm** that the ignition is OFF and the keys are removed.
3. The procedures for propeller pull-throughs or hand propping should always be in accordance with the Aircraft Flight Manual/Pilot Operating Handbook and performed by persons who are trained and competent. The consequences of the hazards associated with the manual movement of the propeller can be fatal.
4. Never accept an aircraft that has a worn ignition key or an ignition assembly that is loose.
5. Pilots should avoid attaching their aircraft key to a large/heavy key ring that would increase the deterioration rate of the aircraft’s ignition switch.
6. Brief your passengers about the hazards of propellers and safe procedures for working around them.

/s/ Keith C. Raley

Keith C. Raley

Chief, Aviation Safety, Training, Program
Evaluation, and Quality Management

DOI, Office of Aviation Services