



SUBJ: Inlet Barrier Filter System

This is information only. Recommendations aren't mandatory.

Introduction

This Special Airworthiness Information Bulletin (SAIB) advises registered owners, operators, and maintenance technicians of helicopters that incorporate engine inlet barrier filters of a potential airworthiness concern. These designs are installed either as part of the type design approval or a FAA-approved supplemental type certificate.

At this time, the airworthiness concern is not an unsafe condition that would warrant airworthiness action (AD) under Title 14 of the Code of Federal Regulations (14 CFR) part 39.

Background

On December 28, 2016, an operator of an Airbus Model AS350 B3 helicopter fitted with an inlet barrier filter reported an engine flameout upon application of power during takeoff. This operation took place in a heavy rain environment. The FAA has also received reports of other instances of helicopters with inlet barrier filters or induction filter installations experiencing abnormal engine operation. Those instances were noted during both ground and flight operations when the helicopter was exposed to persistent or high precipitation rates.

The FAA has found that persistent or high rates of liquid precipitation may result in collection and retention of precipitation by the engine inlet barrier filter media. This condition may occur even when the engine is operating at lower power settings. During an increase in power, such as for takeoff, the pressure change experienced across the filter media rises to the point where the surface tension between the water and filter media is broken, resulting in the retained water being ingested into the engine. Depending on the precipitation rate, time of exposure and prior power settings, the water released may be of sufficient quantity to cause abnormal engine operation or flameout.

Recommendations

The FAA recommends that all owners, operators, and maintenance technicians of helicopters installed with inlet barrier filter systems apply the following practices when the helicopter is stored outside or when precipitation has been observed or forecasted in the area:

- 1) Regularly use inlet covers when the rotorcraft is parked or towed outside, particularly when precipitation is reported in the area.
- 2) During the helicopter preflight inspection, visually check the inlet and filter to verify the inlet and filter medium is dry and free of accumulated moisture.

- 3) If the filter medium is not free of moisture during the preflight inspection, or if the rotorcraft is operating in heavy precipitation, open bypass doors (if equipped).
- 4) When operating in precipitation, sudden and rapid power transients should be avoided whenever practical.

For Further Information, Contact

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