Safety Information Bulletin

Airworthiness – Operations — Aerodromes

SIB No.: 2018-10

Issued: 19 July 2018

Subject: **Super Absorbant Polymers (SAP) Contamination of Jet Fuel**

Ref. Publications:

[1] Joint Inspection Group (JIG) Bulletin 105 – Filter Monitors, dated 11 December 2017

[2] IATA Super-absorbent Polymer (SAP) Special Interest Group - Data summary and proposed roadmap

[3] Airlines for America (A4A) Bulletin 2018.1 - Update on ATA103 Requirements for Filter Monitors, dated 5 June 2018

[4] FAA SAIB HQ-18-17 - Engine Fuel and Control – Filter Monitor Media Migration, dated 22 June 2018

Applicability:

Competent Authorities, Aircraft Operators, Aerodrome Operators.

Description:

There have been several events of engine power fluctuations or other operational problems that were caused by deposits of Super Absorbant Polymers (SAP) in the aircraft/engine fuel system.

As stated in [2], these problems are assumed to be caused by a migration of SAP out of filtration devices (filter monitors) that are used in the fuel supply chain to the aircraft. Aircraft and engine type certificate holders consider the presence of SAP in fuel to be a potential flight safety issue and cannot endorse a level of SAP that is acceptable in fuel.

The aim of this SIB is to enhance awareness of aircraft and aerodrome operators of the risks associated with SAP in jet fuel, inform about on-going industry actions on the matter and provide recommendations for the purpose of mitigating the associated risks.

On-going industry actions

Short term (see [1] for details):

- Replacement of Filter Monitors operating at a Differential Pressure (DP) of greater than 1.0 bar (15 psi) at max achievable flow with EI 1583 7th edition models.
- Limit of the operational DP for all filter monitors to max 1.0 bar (15 psi), at maximum achievable flow. Use of DP limiting devices with an activation point set at 1.0 bar (15 psi).
- Use of 100 mesh hose-end strainers on fuelling equipment fitted with filter monitors.
- Introduction of a new protocol for inspection and cleaning hose-end strainers, as part of commissioning of new filter monitors on fuelling equipment and the routine strainer check procedure.
- Convert Filter Monitor vessels back to EI 1581 6th edition Filter Water Separators, where possible.

- Replace all bespoke Filter Monitor systems using elements with In-to-Out direction of flow, by Filter Water Separator filtration systems.

Long term (before end of 2020):
Replacement of all existing Filter Monitor systems with alternative filtration options, following an extended qualification and field trial programme being undertaken by the industry.

At this time, the safety concern described in this SIB is not considered to be an unsafe condition that would warrant Airworthiness Directive (AD) action under Regulation (EU) 748/2012, Part 21.A.3B., nor the issuance of an operational directive under Regulation (EU) 965/2012, Annex II, ARO.GEN.135(c), nor Safety Directive (SD) action under Regulation (EU) 139/2014, Annex II, ADR.AR.A.040.

Recommendation(s):

Aircraft operators should be aware that SAP in jet fuel can cause engine in-flight shutdowns or operational problems and are advised to report events of SAP contamination to the engine and aircraft type certificate holders, to the fueling service provider and to the NAA.

Aerodrome operators are advised to follow the recommendations of JIG Bulletin 105 [1].

Competent authorities are advised to take into account the content of this SIB during their oversight activities.

Contact(s):

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