BOMBARDIER CUSTOMER SERVICES BUSINESS AIRCRAFT

ADVISORY WIRE
AW300-28-0138

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FROM: BOMBARDIER CUSTOMER SERVICES BUSINESS AIRCRAFT

ADVISORY WIRE

REFERENCE NO: AW300-28-0138

SUBJECT: Fuel Tank Sumping

EFFECTIVITY: BD100-1A10 (20003 to 20999)

ATA: 28

This Advisory Wire contains Operational and Maintenance Information

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1.0 INTRODUCTION:

We would like to take an opportunity to reinforce the importance of regularly performing the fuel sumping procedure as outlined in the Aircraft Flight Manual (AFM). Water removal from fuel tanks is an essential part of the operation of your aircraft.

Fuel tank sumping is of particular importance when refuelling in unfamiliar locations, as well as countries with relatively new or emerging business aircraft support infrastructure. Notably, there have recently been a number of reports of operating difficulties associated with water in the fuel from aircraft frequently operated in Commonwealth of Independent States (CIS) countries.

2.0 DESCRIPTION:

Water in jet fuel can come from various sources, including refining, transportation, and storage at fuel facilities. It can also be produced by humidity and temperature changes during normal aircraft operation. If water is left in low points of the fuel system or tanks, it can cause a number of issues as outlined below.

To prevent water from freezing in the fuel system, the additive DiEthylene Glycol Monomethyl Ether (DiEGME) is used and when correctly mixed, remains suspended in fuel. DiEGME is brought out of suspension only when working as an anti-freeze in the presence of water that has accumulated at low points in the wing or fuel system.

If water is left to dwell in the bottom of the tank, the separation of the DiEGME from the jet fuel is accelerated and a concentrated blend of the water/DiEGME can form. This concentrated blend is sometimes called “Apple Jelly” and can affect the fuel system in 3 ways:

- If drawn into the fuel feed system or the engines, it can cause problems such as failed engine starts or power fluctuations.
- Can have corrosive properties which may cause damage to the aircraft structure.

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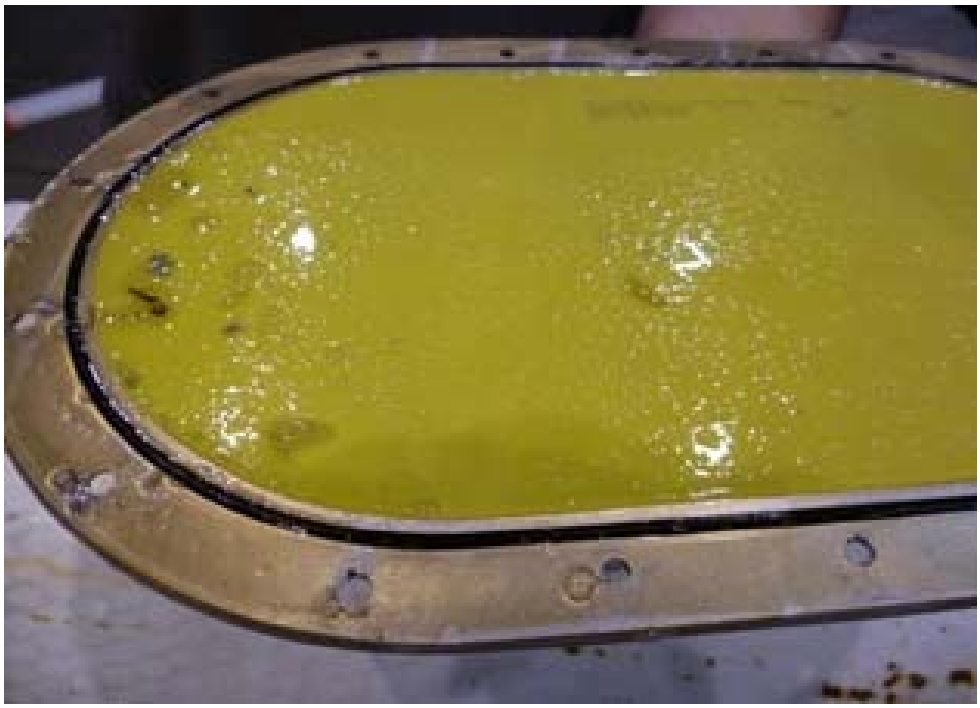
- Can reduce the concentration and the effectiveness of the anti-icing additive in the fuel.

Water can also distort the fuel capacitance as seen by any type of capacitive probe, resulting in fuel quantity indication issues. Water has a dielectric constant of approximately 80 and fuel has a dielectric constant of approximately 2.12. A fuel probe immersed to just 2% to 3% of its total length in water can produce a signal corresponding to full immersion of the probe in fuel.

3.0 ACTION:

Operators and Flight Crews should be aware of the above, and always ensure that fuel tanks are properly drained of water as outlined in the Aircraft Flight Manual.



ACTUAL BUILD-UP OF "APPLE JELLY"