



ASSEMBLY — 40TH SESSION

TECHNICAL COMMISSION

Agenda Item 30: Other issues to be considered by the Technical Commission

ENSURING OVERSIGHT RESPONSIBILITY ON AVIATION FUEL SUPPLIER

(Presented by Bangladesh)

EXECUTIVE SUMMARY

Improving aviation safety by avoiding contaminated fuel is very important since fuel is nothing but blood for engine of an aircraft. Accountability of Member States should be ensured through establishment of necessary ICAO Standards and Recommended Practices (SARPs) on the aviation fuel safety taking into account the fuel supplier activities.

This working paper proposes to establish necessary SARPs in order to ensure oversight responsibility of Contracting States on aviation fuel quality and the fuel suppliers' activities.

<i>Strategic Objectives:</i>	This working paper relates to the Strategic Objectives on Safety.
<i>Financial implications:</i>	Not Applicable.
<i>References:</i>	Doc 9977, <i>Manual on Civil Aviation Jet Fuel Supply</i>

1. INTRODUCTION

1.1 The quality of aviation fuel is no doubt paramount to the safe operation of aircraft. Any risk related to fuel contamination occurrence could lead to very serious consequence. The aim of this working paper is to ensure the responsibilities of Member States on aviation fuel safety. It is implicit that, a State invests a lot of resources to ensure the flight safety. However, this publication is not yet associated with any one specific ICAO Annex.

2. DISCUSSION - EFFECT OF CONTAMINATED FUEL IN AVIATION

2.1 Effect of Super Absorbent Polymers in Aviation Fuel: Super absorbent polymers (SAP), typically consisting of sodium or potassium poly acrylate can absorb and retain large amounts of liquids, e.g. water. It is commonly used in filter monitors installed in airport fuel handling systems (e.g. refueling vehicles, hydrant dispensers and other mobile fueling equipment) to remove free water from fuel. There

are a number of accidents occurred because of the presence of SAP in aviation fuel. Such contaminations were affected the complete fuel system.

2.2 Effect of Water Contamination in Aviation Fuel: Water causes rust and corrosion of iron components thus it forms loose particles of iron oxide, which contributes to fuel nozzle wear and subsequently its failure over a period. Water can lead to premature wear of fuel pumps. Water in fuel at high altitude freezes and can block the fuel pipeline thus stop or severely restrict the fuel flow to the engine which can contribute to engine flame out, or even engine shut down during flight.

2.3 Effect of Microbiological Contamination in Aviation Fuel: Due to microbial growth in the fuel, it can result in fuel tank structure corrosion, and in turn, leads to fuel leak. Fuel leak on hot engine surfaces or hot brakes can result into fire or explosion.

2.4 Therefore, it is important to eliminate or reduce the presence of the water, microbial growth, etc. in the aviation fuel.

2.5 The Current Regulatory Provisions on Aviation Fuel Safety: There are no SARPs yet on the aviation fuel. Following an accident met by A330 aircraft of Cathay Pacific Airlines in Hong Kong in 2010, the International Air Transport Association (IATA) had developed a manual on Civil Aviation Jet Fuel Supply which was later on circulated by ICAO as Doc 9977, *Manual on Civil Aviation Jet Fuel Supply*. However, this publication is not yet associated with any one specific ICAO Annex.

2.6 In order to ensure enhancement of aviation safety and also reduce accident/incident for the causes of fuel contamination, States should have strong legal backup in order to discharge oversight responsibility over aviation fuel supply system. For this reason, ICAO should establish necessary SARPs on aviation fuel safety.

2.7 The proposal is justified for the following reasons:

- a) increasing number of accident/incident in whole over the world for the contaminated fuel;
- b) no regulatory control on the fuel suppliers and fuel quality;
- c) ICAO has not yet established any SARPS on this important issue;
- d) Doc 9977 is not considered as legal backup in order to responsive the Member States;
- e) ICAO critical elements do not address the issue;
- f) capability and facilities of fuel suppliers is not standardized;
- g) fuel specification requirements are not standardized; and
- h) there is no overarching international civil aviation requirement on the control of aviation fuel quality, and the training of personnel who carry out fuel supply.

3. **CONCLUSION**

3.1 The Assembly is invited to:

- a) discuss the issue; and
- b) request ICAO to establish necessary SARPs on aviation fuel safety ensuring oversight responsibility of Member States on fuel supplier activities and fuel quality.

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