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Guidelines on Education, Training and Reporting Practices related to Fume Events



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INTERNATIONAL CIVIL AVIATION ORGANIZATION



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INTERNATIONAL CIVIL AVIATION ORGANIZATION

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to Fume Events**

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GLOSSARY

Explanation of Terms

Note.— The terms contained herein are used in the context of this circular. They have no official status within ICAO.

Auxiliary power unit (APU). A gas-turbine powered unit that provides on-board electrical power and compressed ventilation air, independent of the aircraft propulsion engines.

Contaminant. An airborne constituent that may reduce air quality.

Disinfectants. Chemical or physical agents used to control or kill infectious agents on a surface or in or on baggage, cargo, containers, conveyances and goods.

Disinsectants. Chemical agents used to control or kill insects.

Engine bleed air. Air extracted from the compressor stages of gas turbine propulsion engines and auxiliary power units.

Environmental control system. The equipment in an aircraft used to pressurize, ventilate, air condition or humidify the aircraft. It includes cabin-supply airflow control, temperature control, pressure control, distribution, recirculation and filtration.

Fume(s) . Odorous, gaseous compounds which are not visible.

Note. — In the context of this circular, fumes and odours are deemed to be synonymous, and the term “fume(s)” includes both fumes and odours.

Recirculated air. Air from the aircraft passenger cabin that is reused as part of the air supply.

Smoke. The product of burning materials made visible by the presence of small particles.

Chapter 1

INTRODUCTION

1.1 BACKGROUND

1.1.1 Various types of fumes, smoke, haze and mist may contaminate the cabin and flight deck air supply system. Outside air may be contaminated with engine oil, hydraulic fluid, engine exhaust, ground service vehicle exhaust, fuel, de-icing fluid or ozone. Recirculation fans are another potential source of contaminated air. Also, electrical systems and cabin items such as carry-on baggage, galley equipment and food items, lavatories, cleaning products, disinfectants and disinsectants may contaminate the cabin and/or flight deck air.

1.1.2 Of all of these potential contaminants in the cabin and flight deck, particular concerns have been raised regarding the negative impact on flight safety when crew members are exposed to oil or hydraulic fluid fumes or smoke, and experience acute symptoms in flight. Due to the potential flight safety implications, it is beneficial to provide guidance and instructional material to enable crew members to promptly recognize and respond to suspected air supply system-sourced fumes, as well as to enable aircraft maintenance technicians (AMT) to identify the source of the contaminants and to correct the issue.

1.1.3 At the 38th Session of the Assembly of the International Civil Aviation Organization (ICAO), the International Transport Workers' Federation (ITF) and the International Federation of Air Line Pilots' Associations (IFALPA) invited the Technical Commission to consider the flight safety implications of crew member exposure to oil fumes sourced to the aircraft air supply system. ITF and IFALPA also requested the ICAO Council to develop guidance material to improve awareness and training of flight crew, cabin crew and AMT related to the management of fume events.

1.1.4 The Technical Commission agreed with the intent of the ITF/IFALPA proposal and recommended that the Council review the proposal to develop guidance material. An ad hoc working group composed of subject matter experts from the International Air Transport Association (IATA), ICAO, the International Coordinating Council of Aerospace Industries Associations (ICCAIA), IFALPA, and the ITF was subsequently tasked with development of the guidance material.

1.2 PURPOSE

1.2.1 This circular provides guidance to States to support the development of relevant advisory material for operators to provide suitable awareness and/or training to flight crew, cabin crew and AMT to enable them to prevent, recognize and respond to the presence of fumes, particularly aircraft air supply system-sourced fumes. The content of this circular is intended to complement relevant national regulatory requirements.

1.2.2 There may be implications to flight safety from exposure to oil or hydraulic fluid fumes sourced to the aircraft air supply system if crew members are either impaired or incapacitated during a flight. Therefore, there is an expected flight safety benefit to preventing the occurrence of fume events or reducing occupant exposure to fumes should they occur. Each aviation professional group (i.e. flight crew members, cabin crew members, AMT) has a specific role in recognizing and responding to fumes, particularly to those that are air supply system-sourced. Most of the