



WORKING PAPER

**ACCIDENT INVESTIGATION AND PREVENTION (AIG)
DIVISIONAL MEETING (2008)**

Montréal, 13 to 18 October 2008

Agenda Item 1: Annex 13

1.1: Chapter 1 of Annex 13

REFINING THE ANNEX 13 DEFINITION OF AIRCRAFT DAMAGE

(Presented by France, on behalf of the European Community and its Member States¹,
and by the other States Members of the European Civil Aviation Conference²)

SUMMARY

This paper is mainly based on propositions from the Safety Indicators Study Group (SISG) to help refining the Annex 13 definition of aircraft damage for the purpose of classifying an occurrence as an aircraft accident.

Action by the meeting is in paragraph 3.

1. INTRODUCTION

1.1 The ICAO Safety Indicators Study Group (SISG) uses the Annex 13 — *Aircraft Accident and Incident Investigation* definition of an aircraft accident to determine which occurrences to include in its accident data set. However, the Annex 13 definition was developed many years ago and its application to the damage that can be sustained by modern turbine powered aircraft can be difficult, sometimes resulting in an inconsistent application.

2. DISCUSSION

2.1 The part of the definition of an aircraft accident that relates to personnel injury is well defined in Annex 13 and causes little difficulty in its application. However, problems are often encountered in deciding whether the damage sustained by an aircraft is sufficient to make the occurrence an accident in accordance with the Annex 13 definition, or whether the occurrence was an incident.

¹ Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and United Kingdom. All these 27 States are also Members of the ECAC.

² Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Croatia, Georgia, Iceland, Moldova, Monaco, Montenegro, Norway, San Marino, Serbia, Switzerland, The former Yugoslav Republic of Macedonia, Turkey and Ukraine.

2.2 With only a few accidents involving large aircraft each year, it is important to apply the Annex definition consistently in order to ensure that the accident data set accurately represents the accidents to such aircraft. The Annex 13 definition is unlikely to be updated for some years. Therefore, to provide consistency in applying the Annex definition, there is a need for additional guidance to that already contained in the Annex, on what damage constitutes an aircraft accident.

2.3 Accordingly, the following guidelines have been developed to amplify the damage considered sufficient for an occurrence to be classified as an accident. Some examples of ‘borderline’ cases of aircraft damage are also included in the usage notes. While it is impossible to address all possible aircraft damage scenarios, the following guidance should assist in those cases where there is doubt as to whether the aircraft damage is of sufficient magnitude to be considered an aircraft accident. These guidelines may require ‘fine tuning’ in the light of their application in practice.

3. ACTION PROPOSED

3.1 The meeting is invited to:

- a) consider the amendment proposed in the Appendix; and, if for statistical uniformity the amendment is rejected;
- b) consider the development of an attachment based on the usage notes proposed in the Appendix.

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APPENDIX

PROPOSED AMENDMENT TO ANNEX 13

In the following paragraphs, the part of the Annex 13 definition of an aircraft accident that relates to aircraft damage is shown in **bold**. The additional guidance material is shown in normal font.

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b) The aircraft sustains damage or structural failure which:

- **adversely affects the structural strength, performance or flight characteristics of the aircraft** (i.e. the aircraft is rendered unsafe for a further flight¹), **and**
- **would normally require major repair** (taking more than 48 man hours of work²) **or replacement of the affected part.**

Notes: 1) The aircraft may have landed safely, but cannot be safely dispatched on a further sector without repair.

2) If the aircraft can be safely dispatched after minor repairs, (i.e. less than 48 man-hours of work) e.g. patching a tail strike, and subsequently undergoes more extensive work to effect a permanent repair, then the occurrence would not be classified as an accident. Likewise, if the aircraft can be dispatched under the MEL (Minimum Equipment List) or CDL (Configuration Deviation List) with the affected component removed or missing, then the repair would not be considered as a major repair and consequently the occurrence would not be considered an accident.

The Annex provides the following exceptions:

Except for:

- **Engine failure or damage, when the damage is limited to a single engine, its cowlings or accessories.** Notwithstanding the foregoing, an uncontained engine failure where high-energy components, e.g. fan blades or turbine chunks are ejected through the engine cowling, is counted as an accident. **or**
- **Damage limited to propellers, tail or main rotor blades, wingtips, antennas, probes or vanes**
- **tires, brakes, wheels and superficial damage to the undercarriage**
- **fairings, panels, undercarriage doors, damaged windscreens, small dents or puncture holes in the aircraft skin.**
- minor hail or bird strike damage (including holes in the radome) not covered by b) above.

USAGE NOTES

- If an engine separates from an aircraft, the event is categorized as an accident even if damage is confined to the engine.
- A loss of engine cowls (fan or core), or reverser components, which, does not result in further damage to the aircraft is not considered an accident.
- Occurrences where compressor or turbine blades, or other engine internal components are ejected through the engine tail pipe are not considered an accident.
- A collapsed, or missing radome, is categorized as an accident
- Missing flap, slat and other lift augmenting devices, winglets, etc, that are permitted for dispatch under the MEL or CDL are not considered to be an accident
- Retraction of an undercarriage leg, or wheels up landing, resulting in skin abrasion only. Same considerations as for a tail strike, (see note 2 above)
- If the damage is such that the aircraft depressurizes, or cannot be pressurized, the occurrence is categorized as an accident.
- The removal of components for inspection following an occurrence, such as the precautionary removal of an undercarriage leg following a low speed runway excursion, while involving considerable work, is not considered an accident unless significant damage is found.
- Occurrences that involve an emergency evacuation are not counted as an accident unless someone receives serious injuries, or the aircraft has otherwise sustained sufficient damage.
- Occurrences that involve damage to the tail or main rotor blades while the rotorcraft is on the ground are not categorized as an accident.

Note: The cost of repairs, or estimated loss, such as provided by Airclaims may provide an indication of the damage sustained, but should not be used as the sole guide as to whether the damage is sufficient to count the occurrence as an accident. Likewise, an aircraft may be considered a 'hull loss' because it is uneconomic to repair, rather than it having incurred sufficient damage to be classified as an accident.

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