



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

PROPOSED CHANGES TO DEFINITIONS IN ANNEX 13

(Presented by the Secretariat)

SUMMARY

This paper proposes amendments to some definitions in Annex 13, such as Accident, Safety recommendation and Serious incident.

Action by the meeting is in paragraph 3.

1. INTRODUCTION

1.1 The evolution of aviation has indicated that some definitions in Annex 13 — *Aircraft Accident and Incident Investigation* are in need of updating and others in need of further clarification so as to avoid potential misinterpretations with consequential adverse impact on safety.

2. DISCUSSION

2.1 Definition of accident

2.1.1 The definition of accident was amended for the last time approximately twenty-nine years ago, during the AIG Divisional Meeting in 1979. Since then, significant technological developments in aviation have taken place, requiring that the definition concerned be reassessed.

2.1.2 Unmanned aircraft system (UAS) has recently entered into operation and it is believed that its use in civil operation will increase in the near future. Being an unmanned aircraft and carrying no passengers, UAS involved in accidents would not meet the existing definition of accident in Annex 13. Thus, it is proposed that the definition of accident be expanded to include UAS related accidents. In addition, and as a consequential amendment, a note to paragraph 5.1 of Annex 13 is suggested with the purpose of addressing which UAS would be investigated.

2.1.3 One of the existing “except” clauses for an occurrence to be considered an accident refers to engine failure or damage, when the damage is limited to the engine, its cowlings or accessories. Today, many turbine powered commercial aircraft are equipped with two engines which cost millions of dollars. Failures of such engines in flight operations can be classified as incidents (provided the failure/damage is limited to the engine) and the occurrence may not be investigated, or not be investigated with the same depth of an accident. As a consequence, not all safety lessons would be drawn from such occurrences and consequential economic benefits would be minimum. Aiming at ensuring that such events would be duly investigated, and that existing safety data systems would not be adversely impacted by reclassifying them as accidents, it is suggested that uncontained turbine engine failure be considered a serious incident.

2.1.4 The definition of accident excludes, inter alia, fatal or serious injury to a person when self-inflicted or inflicted by others. Thus, an intentional attack by a person on another person on board, resulting in fatal or serious injury to the latter, would not classify as an accident. On the other hand, such exception is not applicable to damages to the aircraft resulting from deliberate action (e.g. illicit acts such as sabotage, terrorism, act of war etc).

2.1.4.1 Similar discussion was held during the last AIG Divisional Meeting in 1999, when it was agreed to leave the definition unchanged. In this regard, it was noted that occurrences involving unlawful interferences should continue to be investigated since they would be indicative of a failure somewhere in the aviation system, such as the aviation security arrangements. Also, at the outset of an investigation it might not be known whether unlawful interference had been involved.

2.1.4.2 Today, aviation security arrangements in States have developed considerably following the terrorist attacks in the United States on 11 September 2001, along with actions derived from the International Civil Aviation Organization (ICAO) Universal Security Audit Programme started in 2002.

2.1.4.3 Notwithstanding the above-mentioned, the Secretariat, during the preparation of this paper, undertook extra consultation with selected accident investigation bodies and it was felt that safety investigations for security related occurrences should continue to be performed in light of safety benefits that might ensue. It is, thus, proposed that the definition of accident remains unchanged in this regard.

2.1.5 A State has indicated that evidence is needed to investigate an event and that, in the case of a missing aircraft, there would be no concrete evidence of what actually happened. Declaring a missing aircraft as an accident would require a series of actions be taken, as per Annex 13, which could not be fulfilled. Should the official search of an aircraft be terminated and the wreckage not be located, the event would better be classified as “undetermined” and not as an accident. The Secretariat, however, believes that Note 2 to the definition of accident adequately addresses such circumstances, wherein an aircraft would be considered to be missing only when the official search is terminated and the wreckage is not located, which would be indicative that an accident most likely occurred.

2.1.5.1 It is further recalled that paragraph 5.13 in Annex 13 provides for the re-opening of an investigation when new and significant evidence becomes available.

2.1.5.2 With basis on the above-mentioned, it is proposed that Note 2 to the definition of accident be complemented to address the concerns expressed by the State in question.

2.2 Definition of accredited representative

2.2.1 A State has suggested to amend the definition of accredited representative in Annex 13 to be more specific and to read that he/she would need to come from an independent accident investigation body (AIB) if one existed in the State concerned.

2.2.2 The Secretariat, mindful that many States do not have an independent AIB nor a permanent AIB, is of the view that the existing definition of accredited representative in Annex 13 has proven to be helpful to States. It is, therefore, suggested that the relevant definition remains unchanged.

2.3 Definition of safety recommendation

2.3.1 The intention of safety recommendations stemming from accident and incident investigations, is to prevent accidents or incidents. Conversely, there have been some cases in which crew members, air traffic controllers, etc. have been accused or convicted of criminal activity in association with aircraft accidents.

2.3.2 Following an investigation, States other than the State which conducted the investigation may deem necessary to issue safety recommendations. As an illustration, the State of Manufacture (when it is not the State which conducted the investigation) may need to issue a safety recommendation to the aircraft manufacturer. Other States (e.g. State of Registry, State of the Operator) may also need to issue safety recommendations internally.

2.3.3 In order to further clarify the objective of safety recommendation and to avoid its use for purpose other than preventing accidents or incidents, as well as to allow for other States to issue safety recommendations, it is suggested that the relevant definition be expanded.

2.4 Definition of incident and serious incident

2.4.1 Some States felt that it is unclear whether the term “operation of an aircraft” in the definition concerned should be limited to the same circumstances as for an accident, i.e. occurrences which “take place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked”.

2.4.2 On the other hand, other States felt that the definition of incident as it is would enable them to classify and investigate occurrences falling beyond the limits of the definition of accident and which could provide valuable lessons towards the prevention of accidents.

2.4.3 The Secretariat is of the view though, that the definition of serious incident would need to be aligned with that of an accident, taking into account that the difference between an accident and a serious incident lies only in the result.

2.4.4 Consequently, it is proposed that the definition of serious incident be amended to reflect the same circumstance of an accident.

3. ACTION PROPOSED

3.1 The meeting is invited to consider the amendments proposed in the Appendix, which include:

- a) amending the definition of accident concerning UAS and missing aircraft;
- b) expanding the definition of safety recommendation;
- c) amending the definition of serious incident;

- d) adding a note to paragraph 5.1 regarding the investigation of UAS; and
- e) amending the list of examples of serious incidents in Attachment C to Annex 13 to include “uncontained turbine engine failure”.

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APPENDIX

PROPOSED AMENDMENT TO ANNEX 13

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CHAPTER 1. DEFINITIONS

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Accident. An occurrence associated with the operation of an aircraft with the intention of flight which, in the case of a manned aircraft, takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, in which:

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c) the aircraft is missing or is completely inaccessible.

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Note 2.— An aircraft is considered to be missing when the official search has been terminated and the wreckage has not been located. Should the wreckage be subsequently located, consideration should be given to re-open the investigation as per 5.13.

Note 3.— An occurrence associated with the operation of an unmanned aircraft system with the intention of flight takes place between the time the aircraft is ready to move with the purpose of flight until such time it comes to rest at the end of the flight and the primary propulsion system is shut down. The type of unmanned aircraft system to be investigated is addressed in 5.1

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Safety recommendation. A proposal of the accident investigation authority of the State conducting the investigation, based on information derived from the investigation, made with the intention of preventing accidents or incidents and which in no case creates a presumption of blame or liability for an accident or incident.

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Serious incident. An incident involving circumstances indicating that an accident nearly occurred, being associated with the operation of an aircraft with the intention of flight which, in the case of a manned aircraft, takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked.

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CHAPTER 5. INVESTIGATION

RESPONSIBILITY FOR INSTITUTING AND CONDUCTING THE INVESTIGATION

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State of Occurrence

5.1 The State of Occurrence shall institute an investigation into the circumstances of the accident and be responsible for the conduct of the investigation, but it may delegate the whole or any part of the conducting of such investigation to another State by mutual arrangement and consent. In any event the State of Occurrence shall use every means to facilitate the investigation.

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Note 3.— In the case of investigation of an unmanned aircraft system, only aircraft with a design and/or operational approval are to be considered.

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ATTACHMENT C. LIST OF EXAMPLES OF SERIOUS INCIDENTS

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2. The incidents listed are typical examples of incidents that are likely to be serious incidents. The list is not exhaustive and only serves as guidance to the definition of serious incident.

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Aircraft structural failures or engine disintegrations, including uncontained turbine engine failures, not classified as an accident.

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