



ICAO Accident and incident Investigations

AIG WORKSHOP - Mexico

July 2015



Preview

1. Annex 13

a) Independence of Accident Investigation Authorities

2. AIG Guidance material

3. AIG Expert groups

4. Outcomes of the SIPTF and GEPAIR

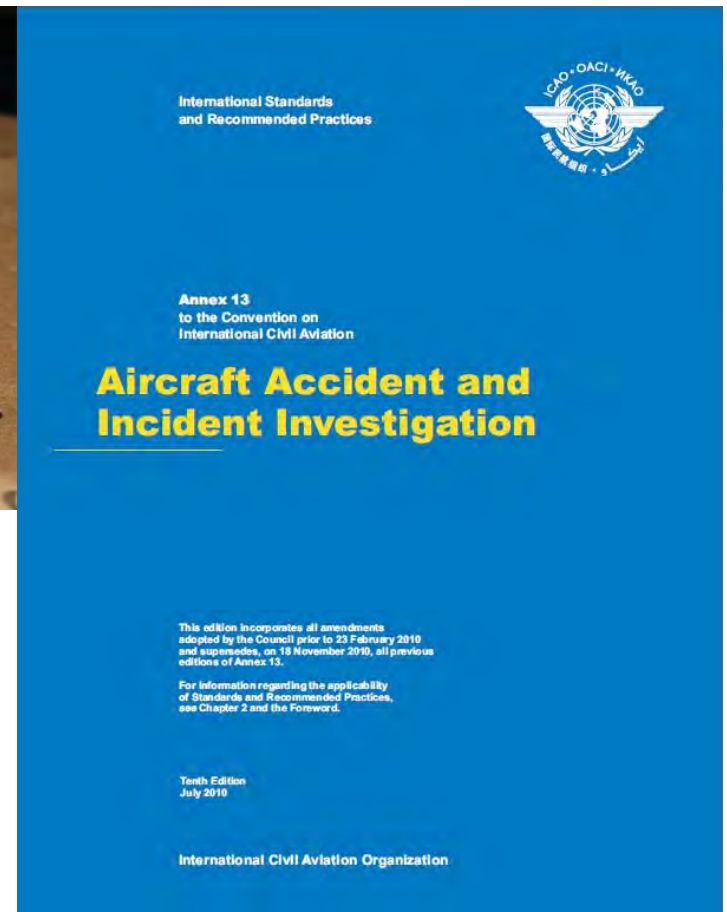
5. AIG Website

6. AIG Workshops

7. AIG Future work



Annex 13 – 10th Edition



Amendments (Nov 2013):

- Definition for contributing factors
- Revised list of examples of serious incidents
- Consequential amendments due to Annex 19



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IN NEXT ANNEX 13 AMENDMENT

CHAPTER 1. DEFINITIONS

Accident investigation authority. The authority designated by a State as responsible for aircraft accident and incident investigations within the context of this Annex.

CHAPTER 3. GENERAL

INDEPENDENCE OF INVESTIGATIONS

3.2 A State shall establish an accident investigation authority that is independent from State aviation authorities and other entities that could interfere with the conduct or objectivity of an investigation.

Note.— Guidance on the independence of an accident investigation authority is contained in the Manual of Aircraft Accident and Incident Investigation, Part I — Organization and Planning (Doc 9756) and the Manual on Accident and Incident Investigation Policies and Procedures (Doc 9962).



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AIG Guidance Material

- Manual of Aircraft Accident and Incident Investigation (Doc 9756)
 - Part I - Organization and Planning (2015)
 - Part II - Procedures and Checklists (2012)
 - Part III - Investigation (2011)
 - Part IV - Reporting (2014)
- Training Guidelines for Aircraft Accident Investigators (Circ 298) – AIG Panel tasked to review



Guidance Material

- Manual on Accident and Incident Investigation Policies and Procedures (Doc 9962, 2011)
- Manual on Regional Accident and Incident Investigation Organization (Doc 9946, 2011)
- ICAO Policy on Aircraft Accident Victims and their Families (Doc 9998, 2013)
 - Manual on Assistance to Aircraft Accident Victims and their families (Doc 9973, 2013)



Guidance Material

- Hazards at Aircraft Accident Sites (Cir 315, 2008)
 - Current considerations:
 - Ballistic parachute systems
 - Investigations in extreme and challenging environments
 - AIG Panel tasked to review



Model Aircraft Accident and Incident Investigation (AIG) Act

First Edition (unedited version) — November 2013

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International Civil Aviation Organization



Model Aircraft Accident and Incident Investigation (AIG) Regulations

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International Civil Aviation Organization

<http://www.icao.int/safety/Implementation/Pages/Resources.aspx>

In next amendment of Doc 9962



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AIG Expert groups

- **Accident Investigation Panel (AIGP)**
- **Flight Recorder Working Group (FLIRECWG) – related to OPS Panel**
- **CAST/ICAO Common Taxonomy Team (CICCTT)**
- **Safety Indicators SG (SISG) - supported**



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Accident Investigation Panel

- AIGP -

- Established on 30 Sep 14
- AIGP/1 meeting, 21-24 April 2015





Terms of Reference

- **Scope of the work**
 - **The AIGP will research and develop provisions for accident and incident investigations to allow for timely and effective investigations as set forth in Annex 13, and in support of the Global Aviation Safety Plan (GASP).**



Terms of Reference

Objectives

1. **Develop and maintain provisions for accident/incident investigations in support of the GASP;**
2. **Consider new procedures, techniques and methodologies for investigations, proposing amendments to provisions and guidance as necessary;**
3. **Review Attachment E to Annex 13, along with other relevant provisions, and determine measures to enhance the protection of safety information gathered during investigations, in particular of certain accident and incident records;**
4. **Identify the category of serious incidents that could be precursors to, or associated with the types of accidents having the highest rate of fatalities (e.g. LOC-I; CFIT; runway incursion/excursion) and discuss strategies for investigating those incidents;**



Objectives (Cont'd)

5. Consider methodologies to assist States with limited resources to conduct large scale investigations, including regional accident and incident investigation organizations (RAIOs);
6. Consider strengthening protection of accident and incident records, including development of guidance and protocols and agreements between accident investigation authorities and judicial authorities; and
7. Progress provisions for accident/incident investigations involving remotely piloted aircraft systems (RPAS).



AIGP/1

- ▶ Guidance on hazards at accident sites; evidence-based training; use of emerging technologies
- ▶ Substance testing after an accident; access to evidential material in investigations; handling of safety recommendations
- ▶ Interaction between Annex 12 and 13 related to search for investigations after SAR; provisions on delegation of investigations and when Final Reports are not timely submitted



AIGP/1

- ▶ Guidance material on protection of investigation records; protocols and agreements between investigation authorities and judicial authorities
- ▶ Provisions on investigation of accidents and incidents involving RPAS
- ▶ Guidance for mutual cooperation/delegation in an Attach. to Annex 13
- ▶ Provisions on investigation of serious incidents in Annex 13



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Flight Recorder Working Group

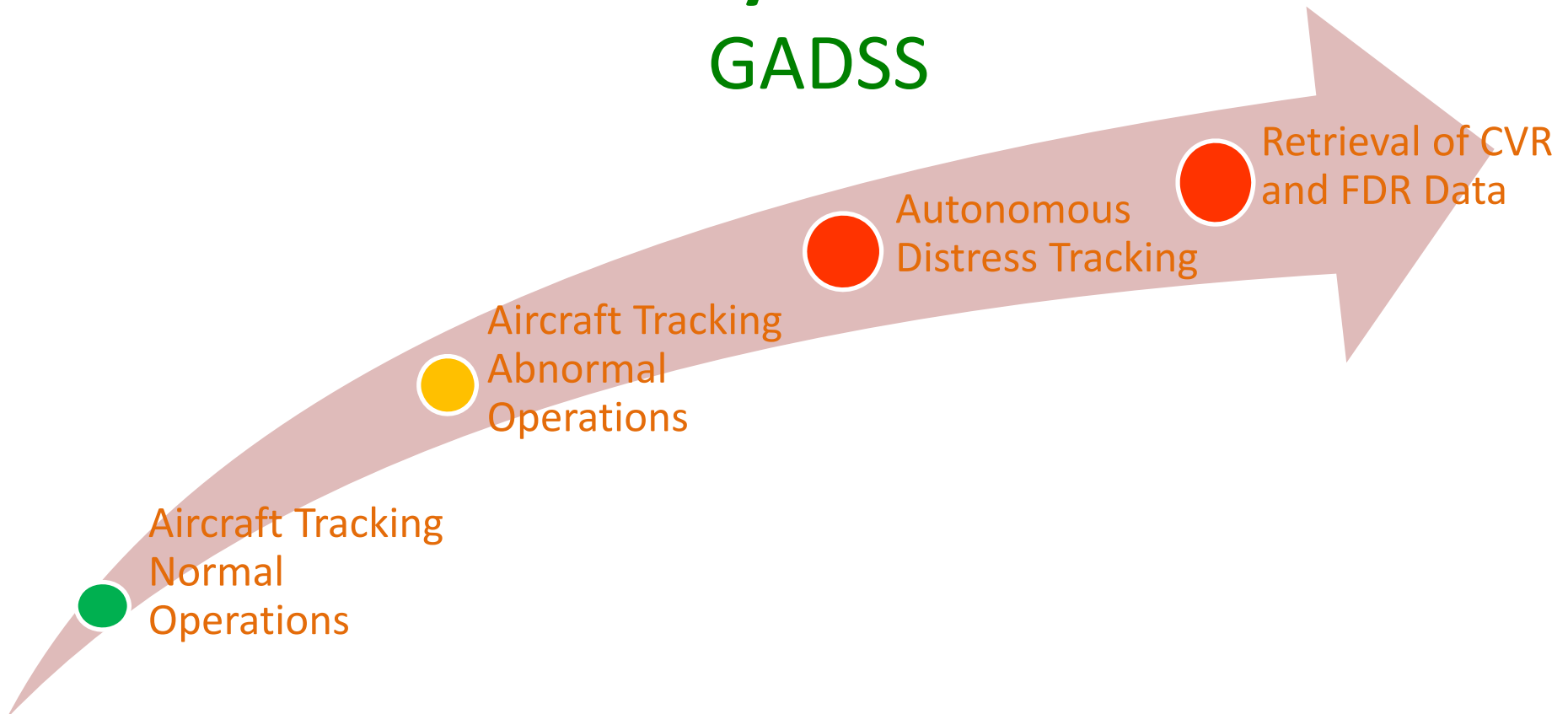
Main concerns in 2014:

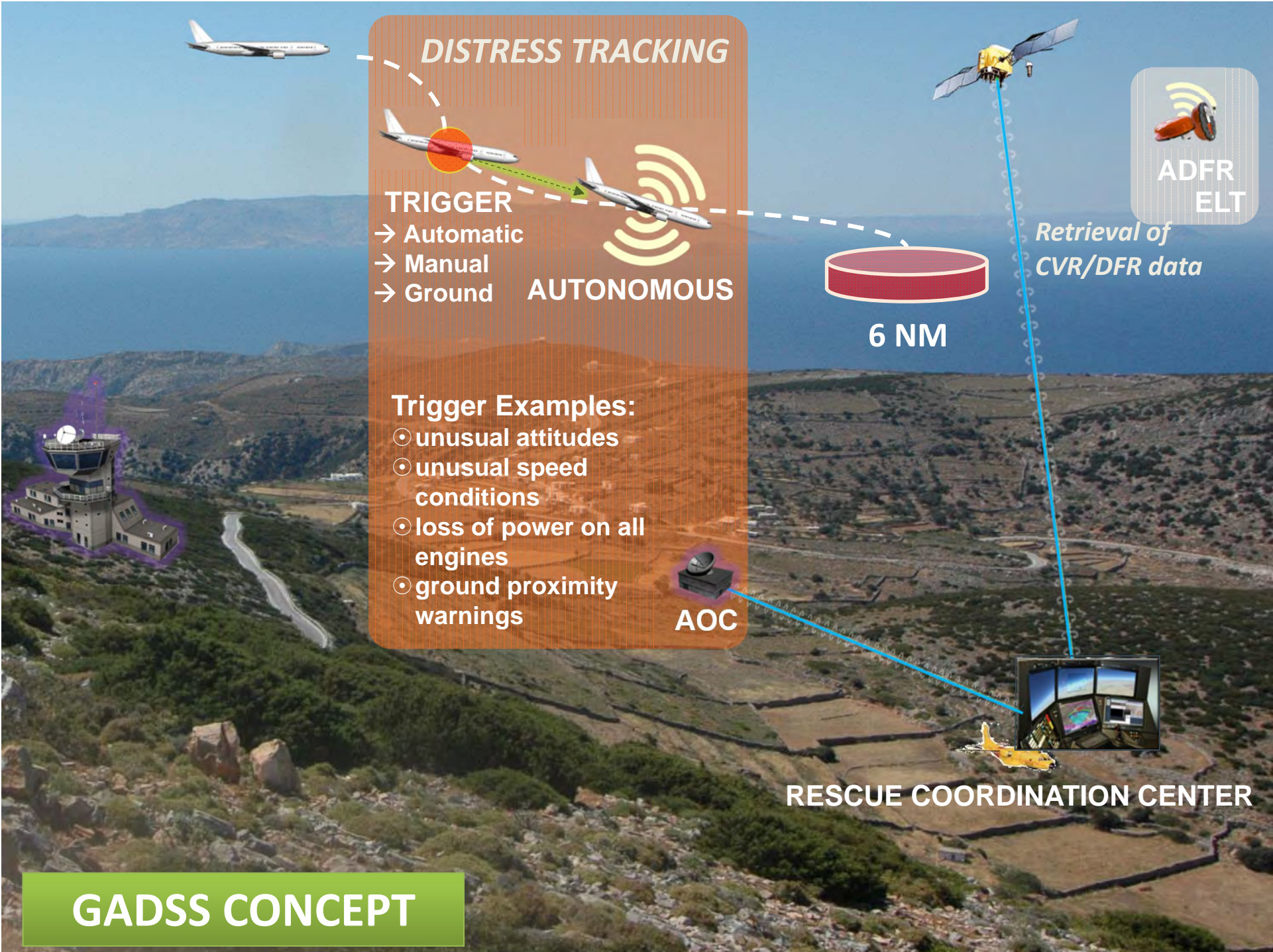
- Locating an aeroplane in distress
- Automatic deployable flight recorders
- Extended CVR recordings





Global Aeronautical Distress & Safety System GADSS







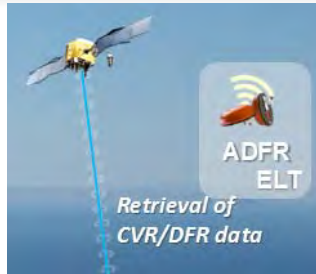
Location of an Aeroplane in Distress

All aeroplanes of a maximum certificated take-off mass of over **27 000 kg** for which the individual certificate of airworthiness is first issued on or after 1 January 2021, shall **autonomously transmit information from which a position can be determined by the operator at least once every minute**, when in distress, in accordance with **Appendix XX**.



Location of an Aeroplane in Distress

*All aeroplanes of a maximum certificated take-off mass of over **5 700 kg** for which the individual certificate of airworthiness is first issued on or after 1 January 2021, **should autonomously transmit information from which a position can be determined at least once every minute, when in distress, in accordance with Appendix XX.***



Retrieval of CVR and FDR Data

Prescriptive standards and recommended practices for ADFR with a performance-based alternative for data retrieval

- **ADFR prescriptive baseline**
 - Recommendation for first CoA from 2019 (> 27,000 kg)
 - Standard for new Type Cert. from 2021 (> 27,000 kg)
- **Performance-based alternative**
 - Not technology-specific
 - Optional for all aeroplanes (first CoA/new type)
 - Adoption as an alternative to ADFR

Timelines

- ✓ **January 2015**
 - Preliminary review by ICAO ANC
- ✓ **May 2015**
 - State Letter
- **March 2016**
 - Adopted
- **November 2016**
 - Applicable *(if adopted)*
- **November 2019**
 - Applicable *(if adopted)*
- **November 2021**
 - Applicable *(if adopted)*



Extended Duration of CVR SARPS

All aeroplanes of a MCTOM of over 27 000 kg for which the individual CofA is first issued on or after 1 January 2021 shall be equipped with a CVR capable of retaining the information recorded during at least the last twenty-five hours of its operation



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Safety Information Protection Task Force



**Group of Experts on Protection of
Accident and Incident Records - GEPAIR**



GPAIR

- **The SIP TF developed recommendations for Annexes 6, 13 and 19, and deemed that some items required additional consideration**
- **GPAIR was established to finalize the recommendations of the SIP TF addressing Paragraph 5.12 and Attachment E to Annex 13; use of data, voice and image recordings in Annex 6**
- **GPAIR consisted of selected legal experts and aircraft accident and incident investigators. Membership include former members of the SIP TF**



GEPAIR

Annex 13

- Restructure/expansion of Para 5.12
- Attachment E \implies Appendix 2

Annex 6

- Standards on protection of CVR, AIRs, FDRs.
(outside scope of investigations)





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Ref.: AN 6/1.2-15/13

24 March 2015

Subject: Proposal for the amendment of Annexes 13 and 6 relating to the protection of accident and incident records and flight recorder recordings

Action required: Comments to reach Montréal by 25 June 2015

Sir/Madam,

1. I have the honour to inform you that the Air Navigation Commission, at the third meeting of its 198th Session held on 29 January 2015, considered proposals developed by the Secretariat with the assistance of the Group of Experts on Protection of Accident and Incident Records (GEPAIR) to amend the Standards and Recommended Practices (SARPs) in Annex 13 — *Aircraft Accident and Incident Investigation*, Annex 6 — *Operation of Aircraft*, Part I — *International Commercial Air Transport — Aeroplanes*, Part II — *International General Aviation — Aeroplanes* and Part III — *International Operations — Helicopters*, relating to the protection of accident and incident records and flight recorder recordings, and authorized their transmission to Contracting States and appropriate international organizations for comments.

2. The amendment proposal stems from recommendations by the Group of Experts on Protection of Accident and Incident Records (GEPAIR), informed by the work of the Safety Information Protection Task Force (SIPTF).

3. In examining the proposed amendments, you should not feel obliged to comment on editorial aspects as such matters will be addressed by the Air Navigation Commission during its final review of the draft amendment.

4. May I request that any comments you may wish to make on the amendment proposal be dispatched to reach me not later than 25 June 2015. The Air Navigation Commission has asked me to specifically indicate that comments received after the due date may not be considered by the Commission and the Council. In this connection, should you anticipate a delay in the receipt of your reply, please let me know in advance of the due date.



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Accident Investigation Section (AIG)

The AIG Section is the custodian of Annex 13 — *Aircraft Accident and Incident Investigation*, providing assistance for the application and interpretation of its Standards and Recommended Practices. To this end, AIG is the ICAO Section in charge of developing policies for aircraft accident and incident investigations conducted by Member States. The sole objective of Annex 13-type investigations is the prevention of accidents and incidents and not the apportionment of blame or liability.

AIG also develops and maintains guidance material to support the investigation of aircraft accidents and incidents, as established in Annex 13.

Contact: AIGInbox@icao.int



e-Library of Final Reports



- Today, some 2000 Final Reports
- FR submitted by States; any of the ICAO official languages
- Based on the ECCAIRS 5 software
- Four standard queries:

aircraft make/model

date

State of Registry

State/Area of occurrence



e-Library of Final Reports

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AIG Workshops

The objective is to provide an opportunity for accident/incident investigators and manufacturer's representatives to share their expertise and experience with each other and explore intra-regional cooperation.

- Attempt to have on annual basis with the support of regional offices



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AIG Future work *besides* regular tasks

- **Safety recommendation addressed to ICAO**
- **Safety Recommendation of Global Concern on website**



Thank you!



Questions?