ERA Operations advisory group

Opinion 01/2014

Amendment of requirements for flight recorders and ULD

DLK recording requirements

(Forward fit and retrofit)

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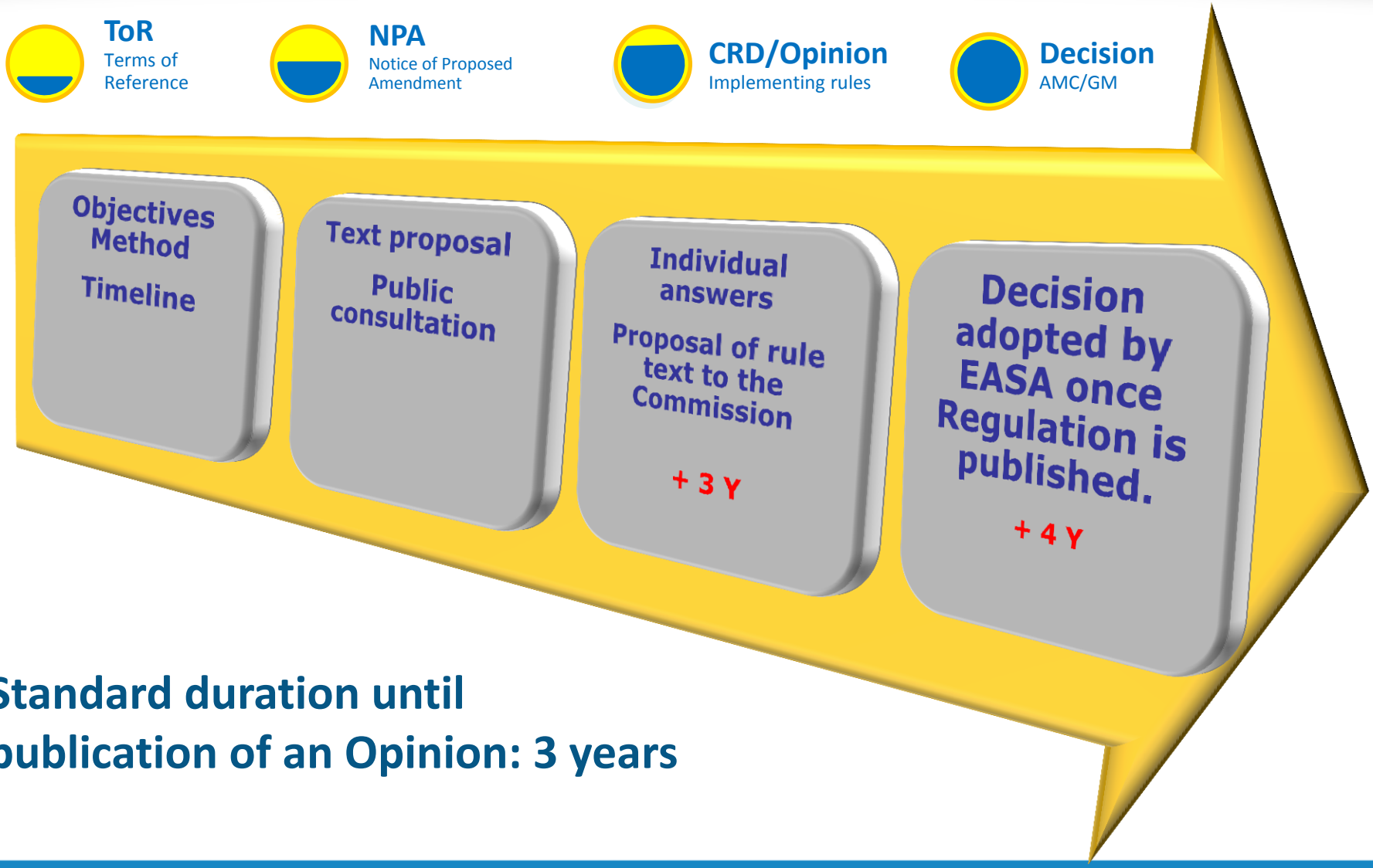
Outline

- **Overview of Opinion No 01/2014**
  - Issues to be addressed
  - EASA proposals
  - Next steps
- **Data link recording**
  - Current regulatory framework (ICAO/EASA)
  - Next steps

Rulemaking process



Standard duration until publication of an Opinion: 3 years

Issue 1/4: Obsolete recording technologies

- **Magnetic tape, magnetic wire, frequency modulation: unreliable**
  - recording missing or of insufficient quality in ¼ to 1/3 of cases
- **Magnetic-tape flight recorders are still widespread**
  - ~30% of CVR on CAT aeroplanes of EASA-MS operators
  - rate of replacement = rate of fleet renewal
- **Solid-state flight recorders are more reliable**
- **ICAO Annex 6: phase out obsolete recording technologies by 2016**

Issue 2/4: CVR « overruns »

- **Relevant part of the CVR recording is overwritten**
- **Frequent after serious incidents**
  - Regulation (EU) 996/2010: serious incidents must be investigated
  - Flight is usually continued
  - The flight crew fails to deactivate the CVR upon flight completion…
  - … or maintenance staff reactivates the CVR
  - CVR preservation procedures: often incomplete
- **Affect mainly aeroplanes**
- **Occurs with 30-min and 2-hours CVRs**
- **7 Safety Recommendations to EASA +38 CVR overruns reported**
- **ICAO Annex 6: all CVRs must be 2-hours by 2016**

Issue 3/4: Transmission time of flight recorder ULDs

- **30 days is insufficient**
  - Time to bring equipment on site
  - Search only possible when the sea state allows
- **Search without a ULD signal can be very expensive**
  - AUV, ROV, special vessel
  - difficult to justify when not a large aeroplane accident
- **Safety Recommendation after accident of AF447**
- **ICAO Annex 6 : increase transmission time of flight recorder ULDs to 90 days by 2018**
- **The 90-days flight recorder ULD:**
  - ETSO-C121b available
  - On the market (ETSO-C121a) and unit price ~ 500 €
  - Interchangeable with 30-days ULDs

Issue 4/4: Locating an accident in an oceanic area

- **Can be exceptionally challenging**
  - Absence of a flight track -> huge search area
  - Seafloor deep and rugged
  - Range of a flight recorder ULD ~1.5 km insufficient
- **Cost:** 106 € to 108 € and up to several months to locate the wreckage
- **Wreckage not located?**
  - -> accident causes not determined
  - -> no corrective action possible
- **Safety Recommendation after accident of AF447**
- **ICAO Annex 6 :** equip large CAT aeroplanes performing long-range overwater flights with an 8.8 kHz ULD
- **The 8.8 kHz ULD**
  - Detection range ~ 11 km
  - ETSO-C200 available (commercially available in 2015)

The proposals of Opinion 01/2014

Issue	Proposals of Opinion 01/2014	Affected parts
Obsolete recording technology	**1.** (Short-term) More frequent inspections of recordings **2.** (Short-term) Mandate pre-flight check **3.** All CVRs to be solid-state by 2019	**CAT** **NCC** **SPO**
CVR Overrun	**1.** (Short-term) Preservation measures in the Operations Manual **2.** By 2019: 20-hours CVRs for large aeroplanes manufactured after 2020 and 2-hours CVR for all other aeroplanes **3.** Strengthened protection of CVR recording	**ORO** **CAT** **NCC** **SPO**

The proposals of Opinion 01/2014

Issue	Proposals of Opinion 01/2014	Affected parts
Transmission time of flight recorder ULDs	Transmission time of flight recorders ULDs extended from **30 to 90 days**: by **2018 for CAT** aeroplanes and by **2020** for all other aircraft	**CAT** **NCC** **SPO**
Locating aircraft wreckage in oceanic areas	**By 2019:** large CAT aeroplanes overflying oceans equipped with: ▪ 8.8-kHz ULD (attached to the aircraft), or ▪ Means to locate, following an accident, the end of flight within 6 NM accuracy	**CAT**

Response to MH370 accident

- **Publication of CRD and Opinion accelerated**
- **Date of introduction of 90-days flight recorders ULDs advanced for CAT aeroplanes**
- **8.8 kHz ULD for all CAT aeroplanes whatever the date of manufacture**
- **Objectives:**
  - faster mitigation of risk
  - better alignment with ICAO Standards

NEXT STEPS

- **EASA Committee discussions**
- **Ad-hoc working group (AHWG) tasked by ICAO to develop a concept of operations for flight tracking**
  (being finalised, objective end 2014)
  - Objectives of aircraft tracking
  - Responsibilities of stakeholders
- **IATA Aircraft Tracking Task Force (ATTF)**

Identify near-term options and develop performance-based recommendations for global flight tracking (Objective end 2014)

- **ICAO to develop guidance material and SARPs**

DLK recording – ICAO requirements

6.3.3.1 Applicability

6.3.3.1.1 All aeroplanes for which the **individual certificate of airworthiness is first issued on or after 1 January 2016**, which utilize any of the data link communications applications listed in 5.1.2 of Appendix 8 and are required to carry a CVR, shall record on a flight recorder the data link communications messages.

6.3.3.1.2 All aeroplanes **which are modified on or after 1 January 2016** to install and utilize any of the data link communications applications listed in 5.1.2 of Appendix 8 and are required to carry a CVR shall record on a flight recorder the data link communications messages.

6.3.3.2 Duration

The minimum recording duration shall be equal to the duration of the CVR.

6.3.3.3 Correlation

Data link recording shall be able to be correlated to the recorded cockpit audio.

ICAO Annex 6 SARPs don't address retrofit of existing aircraft.

It only foresees forward fit of:

- **aircraft build after 2016**
- **Aircraft modified after 2016 to install data link**

Regulation (EU) No 965/2012

CAT.IDE.A.195 Data link recording

Applicable to aeroplanes first issued with **an individual CofA on or after 8 April 2014** that have the capability to operate data link communications and are required to be equipped with a CVR.

=> Forward fit requirement only.

Data link recording implementation issue

Applicability of CAT.IDE.A/H.195 considering the delay to the DLK deployment in Europe?

- Data link deployment in Europe delayed
- It is considered that CAT.IDE.A/H.195 would only be applicable when an aircraft is equipped with data link communication equipment and is going to use it to replace voice during part or the entire flight.
- The agency is going to publish a FAQ related to this issue soon on its website, since it is not considered appropriate to amend the IR.

Next steps

RMT.0249: Recorders installation and ICA

- ToR published on 18 September 2014
- Agency task
- Addresses several issues, including specification for data link recorders
- Changes to CS-23, CS-25, CS-27, CS-29 and AMC/GM to Part-21 foreseen: NPA planned Q2/2015
- **Airworthiness issues only, no update of OPS regulation**

RMT.0294: Data link recording retrofit for aircraft used in CAT

- Initially planned in 2017, with an opinion which was to be published in 2020.
- Scope: Extension to all aeroplanes and helicopters that utilise data link communication applications of the requirements to record on a regulatory recorder the data link communication.
- RMP has been then amended and this task put again in the inventory list. Not planned so far.

EASA
European Aviation Safety Agency

Flight Standards Department

Any Questions?

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