



EUROPEAN AVIATION SAFETY AGENCY
AGENCE EUROPÉENNE DE LA SÉCURITÉ AÉRIENNE
EUROPÄISCHE AGENTUR FÜR FLUGSICHERHEIT

| 10TH ANNIVERSARY |

From an Occurrence to a Safety Publication

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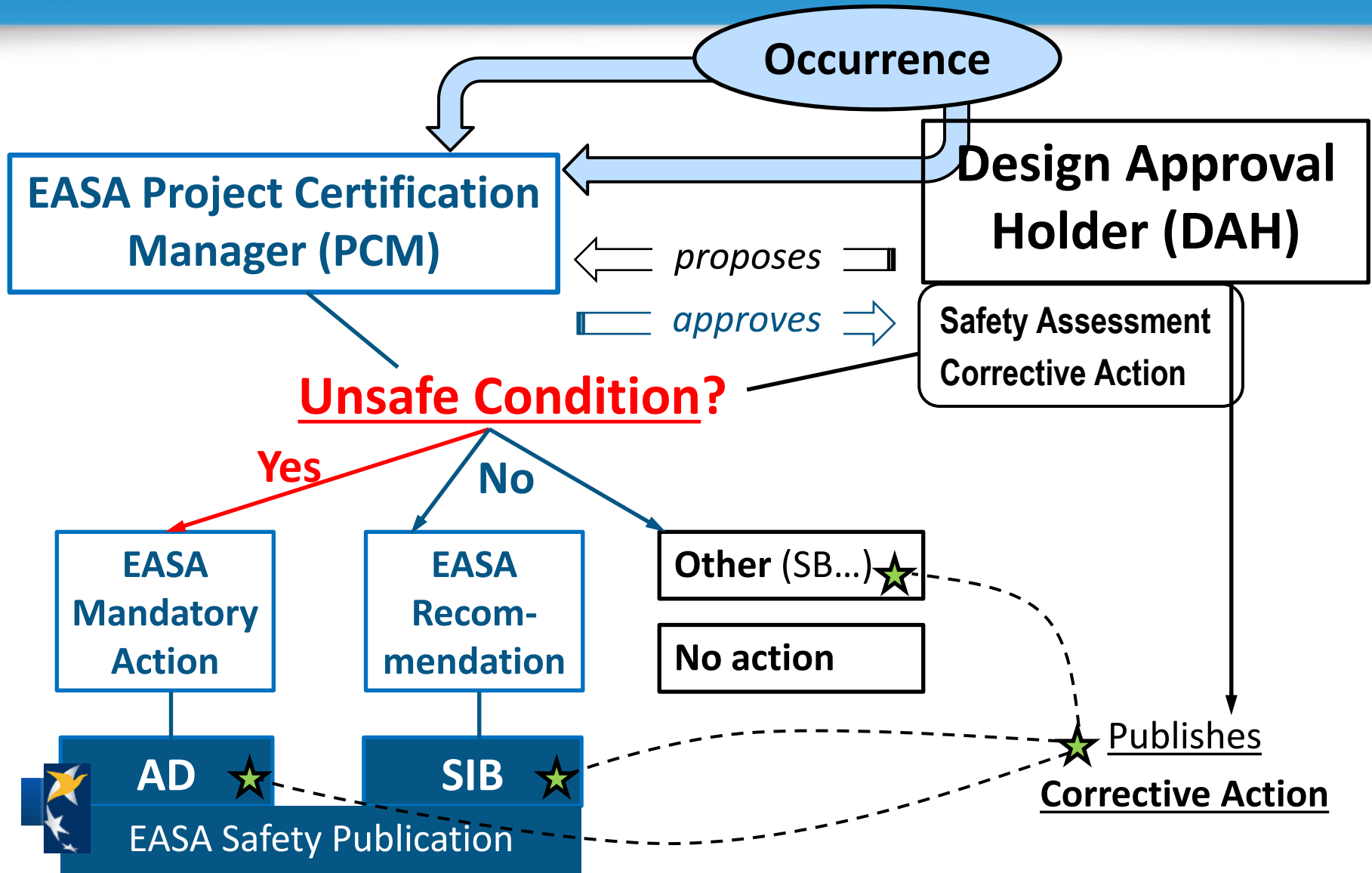
Your safety is our mission.



- 1. From an Occurrence to a Safety Publication:
The Overall Process**
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- 3. IORS**
- 4. Safety Assessment: Unsafe Condition, Process**
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 - SIB**

Appendix – Part 21.A.3A and 21.A.3B

1. From an Occurrence to a Safety Publication: The Overall Process



2. Occurrences – What are they?

An occurrence may be...

✈ An event that occurred during operation

Accident



Incidents

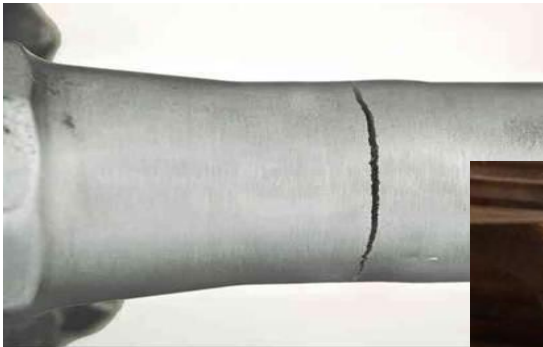


2. Occurrences – What are they?

An occurrence may be...

→ A finding during maintenance, inspection...

Cracked part



Missing part(s)



Corrosion



2. Occurrences – What are they?

An occurrence may be...

→ Results of new test, updated analysis...

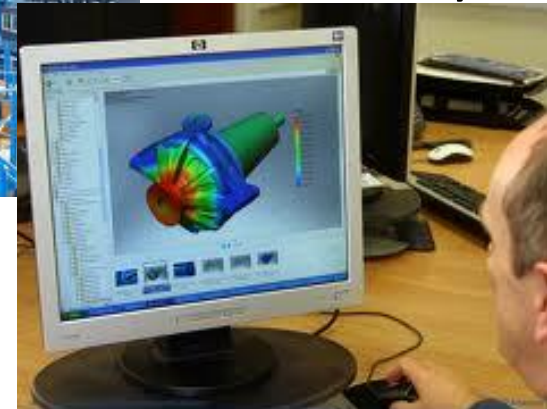
Engine test



Component/rig test



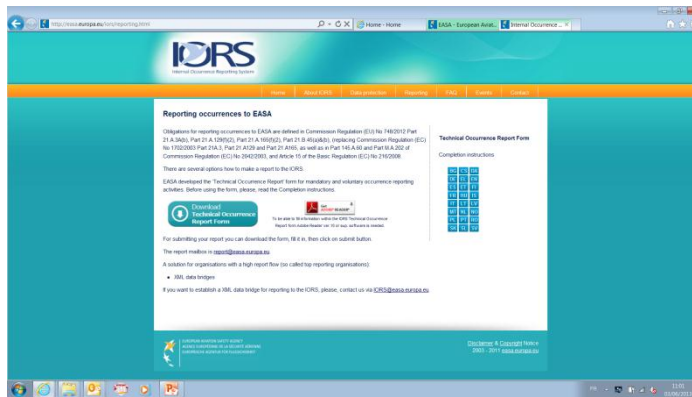
Analysis



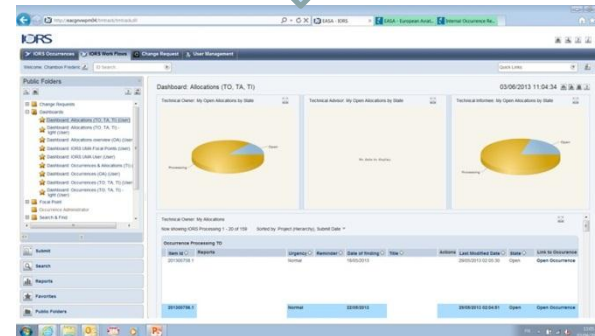
Flight test

3. IORS

The **occurrence** is generally* reported through EASA Internal Occurrence Reporting System (IORS) – *manual or automatic import*)



IORS



* The EASA PCM may receive an occurrence report from other sources

The **EASA PCM** receives the IORS report* in his Workflow Tool (WFT)

4. Safety Assessment – Unsafe Condition

AMC 21.A.3B(b) Unsafe condition

An unsafe condition exists if there is **factual evidence** (from service experience, analysis or tests) that:

(a) An event may occur that would result in **fatalities**, usually with the **loss of the aircraft**, or **reduce the capability of the aircraft** or the **ability of the crew** to cope with adverse operating conditions to the extent that there would be:

- (i) A large reduction in safety margins or functional capabilities, or
- (ii) Physical distress or excessive workload such that the flight crew cannot be relied upon to perform their tasks accurately or completely, or
- (iii) Serious or fatal injury to one or more occupants

unless it is shown that the probability of such an event is within the limit defined by the applicable airworthiness requirements, or

(b) There is an unacceptable risk of serious or **fatal injury to persons other than occupants**, or

(c) **Design features** intended to minimise the effects of **survivable accidents** are **not performing their intended function**.

4. Safety Assessment – Unsafe Condition

AMC 21.A.3B(b) Unsafe condition (*cont'd*)

Note 1: **Non-compliance with applicable airworthiness requirements** is generally considered as an unsafe condition, **unless it is shown** that possible events resulting from this non-compliance **do not constitute an unsafe condition** as defined under paragraphs (a), (b) and (c).

Note 2: An unsafe condition may exist **even though applicable airworthiness requirements are complied with**.

Note 3: The above definition covers the **majority of cases** where the Agency considers there is an unsafe condition. There may be other cases where **overriding safety considerations may lead the Agency to issue an airworthiness directive**.

Note 4: There may be cases where events can be considered as an unsafe condition if they occur too frequently (significantly beyond the applicable safety objectives) and could eventually lead to consequences listed in paragraph (a) in **specific operating environments**. Although having less severe immediate consequences than those listed in paragraph (a), the referenced events may reduce the capability of the aircraft or the ability of the crew to cope with adverse operating conditions to the extent that there would be, for example, a **significant reduction in safety margins or functional capabilities, a significant increase in crew workload, or in conditions impairing crew efficiency, or discomfort to occupants, possibly including injuries**.

4. Safety Assessment – Process

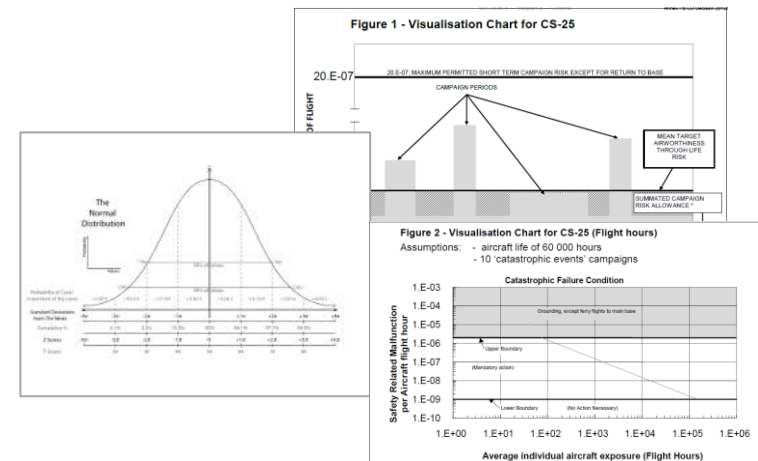
The EASA PCM will normally **review and accept (or not)** the following **input from the DAH**:

- Analysis of **occurrence**
- Determination of the **Unsafe Condition**
- Determination of the **product fleet potentially affected** :
A batch, a model, a type, several models or types...
- **Risk/Safety Assessment**, reaction time calculation



ref guidance of AMC & GM to Part 21.A.3B...

*... combined with good
« engineering judgement » !*





5. *Development of Corrective Actions*

The EASA PCM will normally **review** and **accept (or not)** the following **input from the DAH** (*cont'd*):

- Development of **corrective actions** – Examples:
 - ✓ Inspections (one-time or repetitive)
 - ✓ Rework, repair
 - ✓ Replacement, modification
 - ✓ Limitations
- The EASA PCM **approves** the final set of **corrective actions**, and the **compliance times**
- The DAH **publishes** the corrective actions (SB...)



5. *Development of Corrective Actions*

- In some cases (e.g. complex or controversial issues) the proposed safety assessment and corrective actions may need to be reviewed by a **Panel of Experts** or a **Safety Committee** within EASA



6. *The Safety Publication – AD*

- The EASA Mandatory Continuing Airworthiness Information (MCAI), or AD, will be signed by either:
 - The **EASA Executive Director** (ED), *or*
 - One of his delegates: Generally it will be signed by the **Certification Manager** (CM) of the relevant section in the Product Department of the Certification Directorate

6. The Safety Publication – AD

MCAI: EASA AD

Applicability:


Identifies all products to which the AD applies

Reason:

Provides background, i.e. generally describes the occurrence, and the unsafe condition

Required Action and Compliance Time:

Describes the required action(s) and the compliance time(s) within which the action(s) must be accomplished, in order to maintain airworthiness

EASA	AIRWORTHINESS DIRECTIVE
	AD No.: YYYY-XXXX Date: dd Month YYYY <small>Note: This Airworthiness Directive (AD) is issued by EASA, acting in accordance with Regulation (EC) No 216/2008 on behalf of the European Community, its Member States and of the European third countries that participate in the activities of EASA under Article 66 of that Regulation.</small>
<small>This AD is issued in accordance with EC 1702/2003, Part 21A.3B. In accordance with EC 2042/2003 Annex I, Part M.A.301, the continuing airworthiness of an aircraft shall be ensured by accomplishing any applicable ADs. Consequently, no person may operate an aircraft to which an AD applies, except in accordance with the requirements of that AD, unless otherwise specified by the Agency [EC 2042/2003 Annex I, Part M.A.303] or agreed with the Authority of the State of Registry [EC 216/2008, Article 14(4) exemption].</small>	
Design (Change) Approval Holder's Name: <small>Note: if an STC holder, remove the (brackets); if not, delete (Change)</small>	Type/Model designation(s): <small>Note: if STC, replace text above with "Modification(s)"; and describe the modification</small>
TCDS Number: [or alternative approval (e.g. STC) number]	
Foreign AD: [as appropriate]	
Supersedure: [as appropriate]	
ATA [nr.]	ATA Chapter Name – System / Part Name – Required Action(s)
Manufacturer(s):	[List all names of companies that are known to have manufactured the product(s), part(s) or appliance(s) to which the AD applies. For detailed instructions and guidance, refer to the EASA AD writing Manual]
Applicability:	[Identify all product(s), part(s) or appliance(s) to which the AD applies. For detailed instructions and guidance, refer to the EASA AD Writing Manual]
Reason:	[Describe the unsafe condition that is the reason for the issuance of the AD. For detailed instructions and guidance, refer to the EASA AD Writing Manual]
Effective Date:	dd Month YYYY [standard: 14 days after AD issue date]
Required Action(s) and Compliance Time(s):	Required as indicated, unless accomplished previously: [Describe the required action(s) and the compliance time(s) within which the action(s) must be accomplished. For detailed instructions and guidance, refer to the EASA AD Writing Manual]
Ref. Publications:	[List all the publications that contain the instructions to accomplish the action(s) required by this directive] The use of later approved revisions [of these documents] is acceptable for compliance with the requirements of this AD.

6. *The Safety Publication – PAD, AD, EAD*

- The classification of **PAD**, **AD** or **EAD** will depend on the risk/safety assessment, i.e. the urgency of the corrective actions
- Generally a PAD will be followed by an AD

PAD (Proposed Airworthiness Directive):

This Proposed AD will be closed for **consultation** on [Day/Month/Year].

AD (Airworthiness Directive):

This AD was posted on [Day/Month/Year] as PAD XX-XXX for consultation until [Day/Month/Year]. The **Comment Response Document** can be found at...

or

The **required actions** and the **risk allowance** have granted the issuance of a Final AD with Request for Comments, **postponing the public consultation** process after publication.

EAD (Emergency Airworthiness Directive):

The safety assessment has requested not to implement the full consultation process and an **immediate publication and notification**.

6. *The Safety Publication – Terminating Action of an AD*

Terminating action of an AD:

- A Terminating Action of an AD is an action that removes the unsafe condition and cancel the need for the required actions previously defined in the AD
 - ✓ Example: Introduction of a Modification that will cancel the need for repetitive inspections
 - ✓ A terminating action which is **optional** will result in a **Revision** of the AD
 - ✓ A terminating action which is **mandatory** will result in a **Supersedure** of the AD



6. *The Safety Publication – Cancellation of an AD*

Cancellation of an AD:

- Cancelling an AD is possible when the unsafe condition has fully disappeared
 - ✓ Example: When a « once-around the fleet » inspection has been completed and all applicable corrective actions performed
 - ✓ EASA needs to receive evidence that all potentially unsafe products or parts have been removed and scrapped

6. The Safety Publication – SIB

Non-MCAI: EASA SIB

Applicability:

Identifies all products to which the SIB is directed.

Description:

Provides background, and generally states:
“At this time, the safety concern described in this SIB is not considered to be an unsafe condition that would warrant Airworthiness Directive (AD) action under Commission Regulation (EU) No 748/2012, Part 21.A.3B.”

Recommendation(s):

Describes the recommended actions.

EASA SIB No: YYYY-XX



EASA Safety Information Bulletin

SIB No.: YYYY-XX
Issued: dd Month YYYY

Subject: [Title of SIB – as compact as possible, details to be provided in the ‘description’]

Ref. Publication: [as appropriate]

Applicability: [identify, if possible, the product(s), part(s) or appliance(s) to which the SIB is directed]

Description: [describe the ‘problem’ that is addressed by the SIB]
[if applicable, specify the recommendation as clearly as possible, without including a ‘time’ component, so as to avoid the suggestion that the recommendation is a requirement-in-disguise]

Recommendation(s): [as applicable, only when appropriate]

Contact(s): For further information contact the Safety Information Section, Executive Directorate, EASA. E-mail: ADs@easa.europa.eu.
[also insert relevant approval holder’s address details, if applicable]



Appendix

21.A.3A Failures, malfunctions and defects

21.A.3B Airworthiness directives



From COMMISSION REGULATION (EU) No 748/2012 of 3 August 2012 (PART 21)

21.A.3A Failures, malfunctions and defects

(a) System for Collection, Investigation and Analysis of Data

The holder of a type-certificate, restricted type-certificate, supplemental type-certificate, European Technical Standard Order (ETSO) authorisation, major repair design approval or any other relevant approval deemed to have been issued under this Regulation shall have a system for collecting, investigating and analysing reports of and information related to failures, malfunctions, defects or other occurrences which cause or might cause adverse effects on the continuing airworthiness of the product, part or appliance covered by the type-certificate, restricted type-certificate, supplemental type-certificate, ETSO authorisation, major repair design approval or any other relevant approval deemed to have been issued under this Regulation. Information about this system shall be made available to all known operators of the product, part or appliance and, on request, to any person authorised under other associated implementing Regulations.



21.A.3A Failures, malfunctions and defects (*cont'd*)

(b) Reporting to the Agency

1. The holder of a type-certificate, restricted type-certificate, supplemental type-certificate, ETSO authorisation, major repair design approval or any other relevant approval deemed to have been issued under this Regulation shall report to the Agency any failure, malfunction, defect or other occurrence of which it is aware related to a product, part, or appliance covered by the type-certificate, restricted type-certificate, supplemental type-certificate, ETSO authorisation, major repair design approval or any other relevant approval deemed to have been issued under this Regulation, and which has resulted in or may result in an unsafe condition.
2. These reports shall be made in a form and manner established by the Agency, as soon as practicable and in any case dispatched not later than 72 hours after the identification of the possible unsafe condition, unless exceptional circumstances prevent this.



21.A.3A Failures, malfunctions and defects (*cont'd*)

(c) Investigation of Reported Occurrences

1. When an occurrence reported under point (b), or under points 21.A.129(f)(2) or 21.A.165(f)(2) results from a deficiency in the design, or a manufacturing deficiency, the holder of the type-certificate, restricted type-certificate, supplemental type-certificate, major repair design approval, ETSO authorisation, or any other relevant approval deemed to have been issued under this Regulation, or the manufacturer as appropriate, shall investigate the reason for the deficiency and report to the Agency the results of its investigation and any action it is taking or proposes to take to correct that deficiency.

2. If the Agency finds that an action is required to correct the deficiency, the holder of the type-certificate, restricted type-certificate, supplemental type-certificate, major repair design approval, ETSO authorisation, or any other relevant approval deemed to have been issued under this Regulation, or the manufacturer as appropriate, shall submit the relevant data to the Agency.



21.A.3B Airworthiness directives

(a) An airworthiness directive means a document issued or adopted by the Agency which mandates actions to be performed on an aircraft to restore an acceptable level of safety, when evidence shows that the safety level of this aircraft may otherwise be compromised.

(b) The Agency shall issue an airworthiness directive when:

1. an unsafe condition has been determined by the Agency to exist in an aircraft, as a result of a deficiency in the aircraft, or an engine, propeller, part or appliance installed on this aircraft; and
2. that condition is likely to exist or develop in other aircraft.



21.A.3B Airworthiness directives (*cont'd*)

(c) When an airworthiness directive has to be issued by the agency to correct the unsafe condition referred to in point (b), or to require the performance of an inspection, the holder of the type-certificate, restricted type-certificate, supplemental type-certificate, major repair design approval, ETSO authorisation or any other relevant approval deemed to have been issued under this Regulation, shall:

1. propose the appropriate corrective action or required inspections, or both, and submit details of these proposals to the Agency for approval;
2. following the approval by the Agency of the proposals referred to under point (1), make available to all known operators or owners of the product, part or appliance and, on request, to any person required to comply with the airworthiness directive, appropriate descriptive data and accomplishment instructions.



21.A.3B Airworthiness directives (*cont'd*)

(d) An airworthiness directive shall contain at least the following information:

1. an identification of the unsafe condition;
2. an identification of the affected aircraft;
3. the action(s) required;
4. the compliance time for the required action(s);
5. the date of entry into force.



See also Annex I to ED Decision 2012-020-R
Acceptable Means of Compliance and Guidance
Material (AMC and GM) to Part 21

and in particular:

AMC and GM to 21.A.3A & 21.A.3B



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EASA Certification
Thank You... Any questions?
Your Safety is our Mission

Your safety is our mission.