



# EASA

European Aviation Safety Agency

## Crew Resource Management (CRM) training

- Recent rulemaking development -

3<sup>rd</sup> Workshop on Implementation of AIR OPS and OSD  
6-7 October 2015

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# Overview

- Background
- EASA Rulemaking
- New or expanded items



# Background

- Commission Regulation 965/2012 on AIR OPS is in force
- AMC/GM on CRM training were transferred from JAA
  - With no major changes
- Main concerns raised
  - Little practical and partly non-effective training
  - Authority oversight not sufficient
  - Provisions for CRM trainers not sufficient
- Update should take into consideration
  - Recent developments
  - Experience gained
  - Safety Recommendations (e.g. AF 447 accident)



# RMT.0411 – Rulemaking on CRM training

ToR  
(Issue 2)  
published  
Nov 2012

7 Rulemaking  
Group  
meetings  
Oct 2012 –  
March 2014

NPA  
published  
June 2014

2 Review  
Group  
meetings  
March –  
May 2015

CRD and  
Decisions  
published  
Sep 2015

ToR = Terms of Reference

NPA = Notice of Proposed Amendments

CRD = Comment Response Document



# Rulemaking task – main features

- Amending the AMC/GM
  - No need to amend the Implementing Rules
- Restructuring and rephrasing to improve clarity and readability
- Modernisation by incorporating new items
- Decisions 2015/022/R and 2015/023/R enter into force on 1 Oct 2016
  - To give time to implement



# Rulemaking – main affected paragraphs (1)

... where associated AMC/GM have been amended

## ➤ Regulation 965/2012 – Decision 2015/022/R

### ➤ Competent authority – number and qualification of personnel

➤ ARO.GEN.200(a)(2) Management system

### ➤ Flight crew

➤ ORO.FC.115 CRM training

➤ ORO.FC.215 Initial operator's CRM training

### ➤ Cabin crew

➤ ORO.CC.115(e) Conduct of training courses and associated checking

### ➤ Technical crew

➤ ORO.TC.110(a) Training and checking

### ➤ Medical passenger

➤ SPA.HEMS.135(a) HEMS medical passenger and other personnel briefing



# Rulemaking – main affected paragraphs (2)

**... where associated AMC/GM have been amended**

➤ **Regulation 1178/2011 – Decision 2015/023/R**

➤ **Cabin crew**

➤ Appendix 1 to Part-CC(3) Initial training course and examination



# Rulemaking – new or expanded items

- #1 Qualification and training for inspectors of NAAs
- #2 Expansion to non-CAT operations
- #3 Single-pilot and single CC operations
- #4 Expansion of combined CRM training
- #5 CRM training and management system
- #6 Competency-based CRM training
- #7 Monitoring and intervention
- #8 Resilience development
- #9 Surprise and startle effect
- #10 FC assessment
- #11 Qualification, training and assessment of CRM trainer
- Etc.





# #1 Oversight of competent authorities

## ➤ **Before**

- Oversight over operators not always effective

## ➤ **Now**

- AMC on qualification and training for inspectors of competent authorities
- GM on checklist for oversight of CRM training

## ➤ **To be noted**

- Oversight, in general, is already adequately regulated (ARO.GEN.300)



## #2 Flight crew - applicability

### ➤ **Before**

- Detailed provisions on CRM training only for commercial air transport (CAT) operations

### ➤ **Now**

- CRM training for
  - CAT operations
  - Commercial specialised operations
  - Non-commercial operations with complex motor-powered aircraft (CMPA)
  - Non-commercial specialised operations with CMPA



## #3 Multi- vs. single-pilot operations

### ➤ **Before**

- Not considered

### ➤ **Now**

- No simplifications for single-pilot helicopter operations with technical crew
- Simplifications for other single-pilot operations
  - Focussing on relevant CRM trainings and training elements
  - Computer-based CRM training accepted as stand-alone method
  - For operations with European Light Aircraft 2 (ELA2) the operator decides on CRM training

### ➤ **To be noted**

- Similar provisions for CC, as applicable



## #4 Expansion of combined CRM training

### ➤ **Before**

- Limited provisions

### ➤ **Now**

- Combined CRM training for flight, cabin and technical crew
- Combined training should address
  - Effective communication and coordination
  - Mixed multinational and cross-cultural crew and their interaction
- To be conducted by FC or CC CRM trainer



## #5 Management system (SMS)

### ➤ **Before**

- Not considered

### ➤ **Now**

- CRM training should address hazards and risks identified by the operator's management system (ORO.GEN.200)
- For all crew members



## #6 Competency-based training

### ➤ **Before**

- Not considered

### ➤ **Now**

- Compliance-based approach may be substituted by a competency-based approach
- For all crew members

### ➤ **To be noted**

- This is only the first step. Provisions on competency-based training will be expanded with future rulemaking tasks



# Different trainings and training elements for FC

Excerpt from Table 1 of AMC1 ORO.FC.115

CRM training elements	Initial operator's CRM training	Operator conversion course when changing aircraft type	Operator conversion course when changing operator	Recurrent training	Command course
...					
Relevant to FC					
... Monitoring and intervention	Required	In-depth	In-depth	Required	Required
Relevant to the entire aircraft crew					
... Resilience development Surprise and startle effect	In-depth	Required	Required	Required	In-depth
...					



# #7 Monitoring and intervention

## ➤ **Before**

- Not considered

## ➤ **Now**

- FC to be trained in CRM-related aspects of operation monitoring
- Training during all phases of flight
- Guidance for pilot monitoring when and how to intervene, if felt necessary





## #8 Resilience development

### ➤ **Before**

- Not considered

### ➤ **Now**

- CRM training should address
  - Mental flexibility (e.g. avoid fixed prejudices)
  - Performance adaptation (e.g. adjust actions)
- For all crew members

### ➤ **To be noted**

- In the future the concept of 'resilience engineering' may be introduced at a higher level



## #9 Surprise and startle effect

### ➤ **Before**

- Not considered

### ➤ **Now**

- CRM training should address unexpected, unusual and stressful situations, i.e.
  - Surprise and startle effects
  - Crisis management
- For all crew members

### ➤ **To be noted**

- Main driver was the AF 447 accident and associated safety recommendations



# #10 Flight crew assessment

## ➤ **Before**

- No assessment during different CRM trainings

## ➤ **Now**

- ‘Assessment of CRM skills is the process of observing, recording, interpreting and debriefing crews and crew member’s performance using an accepted methodology’
- Assessment
  - In the operational environment
  - Not during classroom training

## ➤ **To be noted**

- No assessment for CC (‘overregulation’)



# #11a CRM trainer - qualification

## ➤ **Before**

- Limited provisions

## ➤ **Now**

- Provisions for **classroom** CRM trainers
  - Not for instructors (simulator or aircraft)
- Qualification criteria are specified for
  - Pilots/non-pilots
  - Former pilots
  - Non-aviation CRM trainers

## ➤ **To be noted**

- Similar provisions for CC CRM trainer



# #11b CRM trainer – further provisions

## ➤ **Before**

- Not considered

## ➤ **Now**

- Provisions for classroom FC CRM trainer
  - Training
  - Assessment
  - Recency and renewal of qualification

## ➤ **To be noted**

- Similar provisions for CC CRM trainer



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**The End**

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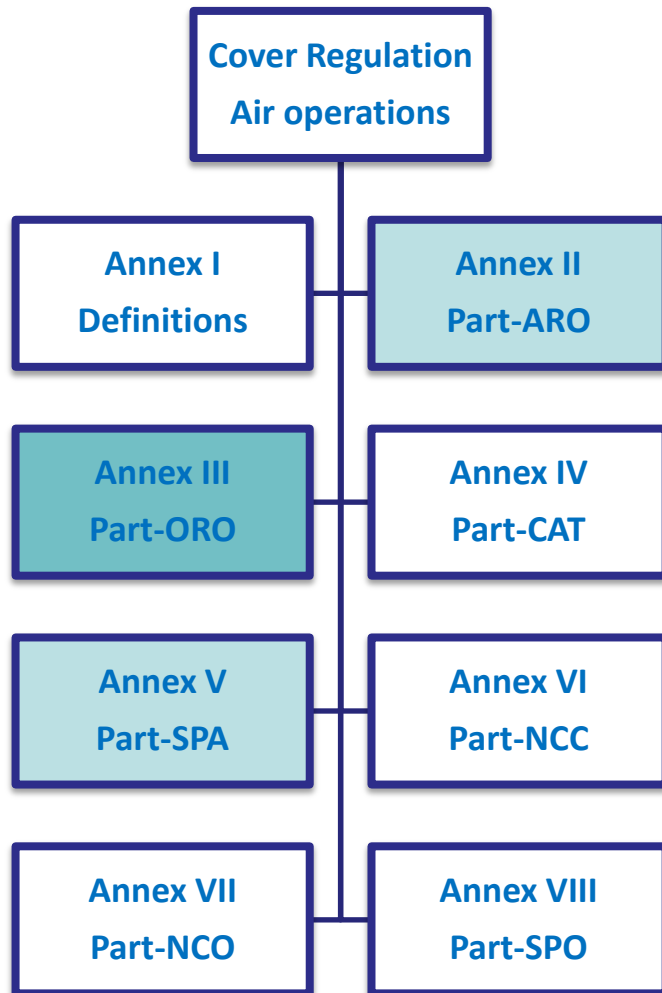


# Discussion, Questions & Answers





# AIR OPS rule structure



- **Part-ARO:** Authority requirements - OPS
- **Part-ORO:** Organisation requirements - OPS
- **Part-CAT:** Commercial air transport operations
- **Part-SPA:** Operations requiring specific approvals
- **Part-NCC:** non-commercial operations with complex motor-powered aircraft (CMPA)
- **Part-NCO:** non-commercial operations with other-than-CMPA
- **Part-SPO:** specialised operations, e.g. aerial work





# AMC/GM Part-ORO – flight crew

- AMC1 ORO.FC.115 CRM training – multi-pilot operations
- AMC2 ORO.FC.115 CRM training – single-pilot operations
- AMC3 ORO.FC.115 Flight crew CRM trainer
  
- GM1 ORO.FC.115 General
- GM2 ORO.FC.115 Training environment, trainers and instructors
- GM3 ORO.FC.115 Minimum training times
- GM4 ORO.FC.115 Design, implementation and evaluation of training
- GM5 ORO.FC.115 Resilience development
- GM6 ORO.FC.115 Non-technical skills assessment
- GM7 ORO.FC.115 Flight crew trainer assessment



# AMC/GM Part-ORO – cabin and technical crew

- AMC1 ORO.CC.115(e) CRM training – multi cabin crew operations
- AMC2 ORO.CC.115(e) CRM training – single cabin crew operations
- AMC3 ORO.CC.115(e) Cabin crew CRM trainer
  
- GM1 ORO.CC.115(e) General
- GM2 ORO.CC.115(e) Minimum training times
- GM3 ORO.CC.115(e) Design, implementation and evaluation of training
- GM4 ORO.CC.115(e) Resilience development
- GM5 ORO.CC.115(e) Cabin crew trainer assessment
  
- AMC1 ORO.TC.110(a) CRM training



## #12 Cultural differences

### ➤ Before

- Limited provisions

### ➤ Now

- CRM training has been expanded, recognising that cultural differences may lead to
  - Different communication specifics
  - Different approaches to the same situation
  - Different methods for solving the problem
- For all crew members