



# Comment-Response Document 2014-17

## Crew Resource Management (CRM) training

CRD TO NPA 2014-17 — RMT.0411 (OPS.094) — 25.9.2015

Related Decisions 2015/022/R and 2015/023/R

### EXECUTIVE SUMMARY

This Comment-Response Document (CRD) contains the comments received on NPA 2014-17 (published on 26.6.2014) and the responses, including a summary thereof, provided thereto by the European Aviation Safety Agency.

Based on the comments and responses, Decisions 2015/022/R and 2015/023/R were developed.

	<b>Applicability</b>	<b>Process map</b>
Affected regulations and decisions:	Decision 2014/025/R (Part-ARO); Decision 2014/017/R (Part-ORO); Decision 2012/019/R (Part-SPA); Decision 2012/005/R (Part-CC)	Concept Paper: No Terms of Reference: 12.11.2012 Rulemaking group: Yes RIA type: Light
Affected stakeholders:	Air operators; training organisations; personnel/licence and certificate holders; EASA Member States	Technical consultation during NPA drafting: No Publication date of the NPA: 26.6.2014 Duration of NPA consultation: 3.5 months
Driver/origin:	Safety; stakeholder request	Review group: Yes
Reference:	Safety Recommendations: SPAN-2011-026; SPAN-2011-027; FRAN-2012-042; FRAN-2012-043; FRAN-2012-044; FRAN-2012-021; FRAN-2013-019	Focussed consultation: No Publication date of the Opinion: N/A Publication date of the Decision: 2015/Q3



## Table of contents

1. Procedural information.....	3
1.1. The rule development procedure.....	3
1.2. The structure of this CRD and related documents .....	3
1.3. The next steps in the procedure.....	3
2. Summary of comments and responses.....	4
3. Individual comments and responses.....	14



## 1. Procedural information

### 1.1. The rule development procedure

The European Aviation Safety Agency (hereinafter referred to as the 'Agency') developed this CRD in line with Regulation (EC) No 216/2008<sup>1</sup> (hereinafter referred to as the 'Basic Regulation') and the Rulemaking Procedure<sup>2</sup>.

This rulemaking activity is included in the Agency's [4-year Rulemaking Programme](#) under RMT.0411 (OPS.094). The scope and timescale of the task were defined in the related Terms of Reference (see process map on the title page).

The draft Acceptable Means of Compliance (AMC) and Guidance Material (GM) have been developed by the Agency based on the input, among others, of the Rulemaking Group RMT.0411 (OPS.094). All interested parties were consulted through NPA 2014-17<sup>3</sup>, which was published on 26 June 2014. 406 comments were received from interested parties including industry, national aviation authorities, training organisations and aviation associations.

The text of this CRD has been developed by the Agency based on the input of the Review Group 2014-17.

The process map on the title page contains the major milestones of this rulemaking activity.

### 1.2. The structure of this CRD and related documents

This CRD provides a summary of the comments and responses as well as the full set of individual comments (and responses thereto) received to NPA 2014-17.

### 1.3. The next steps in the procedure

This CRD is published together with the Decisions 2015/022/R and 2015/023/R containing the amended AMC/GM on CRM training.

---

<sup>1</sup> Regulation (EC) No 216/2008 of the European Parliament and of the Council of 20 February 2008 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency, and repealing Council Directive 91/670/EEC, Regulation (EC) No 1592/2002 and Directive 2004/36/EC (OJ L 79, 19.3.2008, p. 1).

<sup>2</sup> The Agency is bound to follow a structured rulemaking process as required by Article 52(1) of the Basic Regulation. Such process has been adopted by the Agency's Management Board and is referred to as the 'Rulemaking Procedure'. See Management Board Decision 01-2012 of 13 March 2012 concerning the procedure to be applied by the Agency for the issuing of Opinions, Certification Specifications and Guidance Material (Rulemaking Procedure).

<sup>3</sup> <http://www.easa.europa.eu/document-library/notices-of-proposed-amendment/npa-2014-17>.



## 2. Summary of comments and responses

The following paragraphs provide a summary of the comments and contain the conclusions on the main topics that have been identified in the NPA public consultation process.

Whenever reference is made in this chapter to a draft provision, it relates to the respective paragraph of Chapter 3 of NPA 2014-17.

### Computer-based training

In the NPA, the Agency introduced draft provisions concerning computer-based training as follows:

1. Flight crew:
  - a. for multi-pilot operations: computer-based training not as stand-alone but as complementary training<sup>4</sup>;
  - b. for single-pilot operations: computer-based training as stand-alone training<sup>5</sup>.
2. Cabin crew:
  - a. for multi cabin crew operations: same as for multi-pilot operations<sup>6</sup>;
  - b. for single cabin crew operation: computer-based training as stand-alone training for aircraft with a maximum operational passenger seating configuration of 19 or less<sup>7</sup>.

3 commentators stated that computer-based training should not be permitted as stand-alone training method, even for single-pilot and single cabin crew operations<sup>8</sup>. In contrast, 7 commentators explained that limiting computer-based training as stand-alone method to single-pilot and single cabin crew operations is a reasonable approach<sup>9</sup>. Based on the comments received, the Agency decided not to change the original approach as described above.

### Minimum training times

Based on the input received, the Agency proposed the introduction of minimum training times as AMC in the NPA as follows:

1. Flight crew:
  - a. combined CRM training for multi-pilot operations: 8 hours over a period of 3 years, which may be reduced when evidenced by the operator's management system<sup>10</sup>;
  - b. initial operator's CRM training for multi-pilot operations: 24 hours, of which 16 hours should be classroom training<sup>11</sup>;
  - c. initial operator's CRM training for single-pilot operations:

<sup>4</sup> Paragraph (a)(3) of AMC1 ORO.FC.115.

<sup>5</sup> Paragraph (b)(4) of AMC2 ORO.FC.115.

<sup>6</sup> Paragraph (a)(3) of AMC1 ORO.CC.115(e).

<sup>7</sup> Paragraph (c) of AMC2 ORO.CC.115(e).

<sup>8</sup> Comments Nos 29, 32, 268, 275, 283 and 289 (some commentators provided more than one comment on the same subject).

<sup>9</sup> Comments Nos 73, 95, 135, 164, 213, 351 and 408.

<sup>10</sup> Paragraph (a)(6)(ii) of AMC1 ORO.FC.115.

<sup>11</sup> Paragraph (b) of AMC1 ORO.FC.115.



- 8 hours for complex motor-powered aircraft<sup>12</sup>;
  - to be determined by the operator for other-than complex motor-powered aircraft<sup>13</sup>.
2. Cabin crew:
- a. combined CRM training for multi cabin crew operations: 8 hours over a period of 3 years, which may be reduced when evidenced by the operator's management system<sup>14</sup>;
  - b. operator's CRM training for multi cabin crew operations: 8 hours<sup>15</sup>;
  - c. operator's CRM training for single cabin crew operations: 4 hours for aircraft with a maximum operational passenger seating configuration of 19 or less<sup>16</sup>.
3. CRM trainer:
- a. 40 hours which is reduced to 24 hours for:
    - flight crew trainees holding an instructor certificate<sup>17</sup>;
    - cabin crew trainees when the operator can justify that the trainee already has received sufficient and suitable instruction in training skills<sup>18</sup>;
  - b. refresher training: 8 hours<sup>19</sup>.

The topic of minimum training times triggered a large number of comments. These comments are summarised in Table 1. The main items can be highlighted as follows:

- Proposal 'no minimum training times for any training' vs proposal 'minimum training times for all trainings': after further consideration and discussion within the Review Group, the Agency came to the conclusion that introducing minimum training times for certain trainings, as listed above, but not for others, is an acceptable compromise and should not be changed. However, the Agency decided that these minimum training times should be provided as GM, and not as AMC. Nowadays, where 'classic' compliance-based training is more often replaced by a competency-based approach, it is not appropriate any longer to prescribe minimum training times using AMC. It should also be noted that no minimum training times for any training are foreseen, when the operator decides to substitute compliance-based CRM training with a competency-based approach<sup>20</sup>.
- Proposal to use days instead of hours: after further discussion, the Agency decided to keep 'hours' since they are more precise than days. However, during the discussion with the Review Group it became clear that the original assumption that 8 hours is equal to 1 working day may lead to confusion, since it is not clear whether breaks are included or not. To avoid such a

<sup>12</sup> Paragraph (b)(2)(i) of AMC1 ORO.FC.115.

<sup>13</sup> Paragraph (b)(2)(ii) of AMC1 ORO.FC.115.

<sup>14</sup> Paragraph (a)(6)(ii) of AMC1 ORO.CC.115(e).

<sup>15</sup> Paragraph (b)(2) of AMC1 ORO.CC.115(e).

<sup>16</sup> Paragraph (a) of AMC2 ORO.CC.115(e).

<sup>17</sup> Paragraph (c)(2) of AMC3 ORO.FC.115).

<sup>18</sup> Paragraph (b)(2) of AMC3 ORO.CC.115(e).

<sup>19</sup> Paragraph (c)(4)(i) of AMC3 ORO.FC.115 and paragraph (b)(4)(i) of AMC3 ORO.CC.115(e).

<sup>20</sup> Paragraph (a)(8) of AMC1 ORO.FC.115 and paragraph (a)(8) of AMC1 ORO.CC.115(e).



confusion, the Agency decided to use always the term ‘training hours’. Based on comments received, the Agency decided to assign 6 training hours to 1 day. Consequently, in the AMC, e.g. ‘8 hours’ was amended to ‘6 training hours’. Similar amendments have been made to other numbers.

- Proposal to reduce minimum training times for combined CRM training from 8 hours over a period of 3 years to 6 or 4 hours over a period of 3 years: following the discussion above, the Agency decided to amend ‘8 hours’ to ‘6 training hours’ as a minimum for combined CRM training.
- Proposal to reduce or increase classroom training minimum training times for (initial) operator’s CRM training: following the discussion above, the Agency decided to amend ‘16 hours’ to ‘12 training hours’ as a minimum for (initial) operator’s CRM training.
- Proposal that minimum training times for single-pilot and single cabin crew operations should be the same as for multi-pilot and multi cabin crew operations: after further consideration and discussion with the Review Group, the Agency decided to keep the reduced minimum training times. Following the discussion above, the Agency decided to amend ‘8 hours’ to ‘6 training hours’ for flight crew. For cabin crew, however, ‘4 hours’ were ‘converted’ into the same number of training hours, and were not further reduced. The Agency came to the conclusion that with less than 4 hours of cabin crew operator’s CRM training a substantial training cannot be ensured.
- Proposal to reduce minimum training times for refresher training of CRM trainer to 4 hours: following the discussion above, the Agency decided to amend ‘8 hours’ to ‘6 training hours’ as a minimum for the refresher training for CRM trainers.

**Table 1: Major comments received on the topic ‘Minimum training times’**

Comment	Commentator (number of comment in brackets)
<b>1. GENERAL ISSUES</b>	
No minimum training times for any training	IATA (307)
Minimum training times as little as possible	DLH (59, 66), AEA (371), IATA (314)
Introduce minimum training times for all trainings	Austrian Cockpit Association (281)
Use days instead of hours (1 day instead of 8 hours)	DLH (59, 66), AEA (371), IATA (314)
<b>2. CREW</b>	
Combined training: 8 hours over 3 years as minimum is supported	A.L.P.L. (91), N. Queiroz (131), ECA (160), Vereinigung Cockpit (209), SNPL France Alpha(346), Betriebsrat NIKI (404)
Combined training: 6 hours over 3 years as absolute minimum	FPA SSC (192)



Comment	Commentator (number of comment in brackets)
Combined training: 6 hours (being one day) over 3 years as minimum	Thomson Airways (394)
Combined training: 4 hours over 3 years as minimum or remove minimum training time	EasyJet (189)
Combined training: remove hours	IATA (323), AEA (377)
Initial training: not clear why duration has been increased from 2 days to 24 hours (3 days)	IATA (308)
Initial training: 2 days in total is sufficient	DLH (55), AEA (365)
Initial training: change from 24 and 16 hours to 3 and 2 days	Skytrain (36)
Initial classroom training: 14 hours (2 days) as minimum	ATF (257)
Initial training (flight crew): 18 hours in classroom as minimum	A.L.P.L. (91), N. Queiroz (131), ECA (160), Vereinigung Cockpit (209), SNPL France Alpha(346), Betriebsrat NIKI (404)
Command course: introduce minimum training times as follows: 24 hours in total, of which 16 are classroom training	A.L.P.L. (121), N. Queiroz (151), ECA (180), Vereinigung Cockpit (244), SNPL France Alpha(380), Betriebsrat NIKI (423)
Single-pilot and single cabin crew: minimum training times as for multi-pilot and multi cabin crew	Austrocontrol (289)
Single-pilot initial training for other-than complex motor-powered aircraft: introduce minimum training time	ALPL (96), N. Queiroz (136), ECA (165), Vereinigung Cockpit (214), SNPL France Alpha(352), Betriebsrat NIKI (409)
Cabin crew operator's CRM training: remove minimum training time	IATA (325), AEA (377, 378), Thomson Airways (399)
<b>3. CRM TRAINER</b>	
Basic training: 5 days with 6 hours each day; this means 30 hours instead of 40 hours as minimum	Thomson Airways (396)
Basic training: 16 or 24 hours as minimum (instead of 24 or 40 hours)	Austrocontrol
Refresher training: 4 hours as minimum	Ryanair (42)
Basic training (cabin crew): remove minimum training time	IATA (330), AEA (379)
Refresher training (cabin crew): remove minimum training time	IATA (331), AEA (379)



### **Resilience development**

In the NPA, the Agency introduced provisions on resilience development for flight crew<sup>21</sup> and for cabin crew<sup>22</sup>. 3 commentators proposed to delete the AMC/GM on ‘resilience development’ completely<sup>23</sup>, while one commentator suggested deleting this training element at least for the introductory course for cabin crew<sup>24</sup>. The main arguments raised were as follows:

- Personality cannot be influenced, and mental flexibility cannot be trained during CRM training in the long term.
- Resilience development is very specific. The training elements, however, should be as generic as possible to give operators the chance to adapt their training programmes to actual, practical and scientific insight.
- ‘Resilience development’ is a specific term which should be replaced by ‘stress copying technique’ (and which then should also include ‘surprise and startle effect’).

6 commentators, while generally supporting resilience development as a new training element, emphasised that further work is needed in implementing effective training<sup>25</sup>. Concerning the GM, one commentator, while recognising the need for guidance, questioned whether the proposed text will be easily understood. The commentator suggested including for clarification an example of a situation where this concept applies, and how it applies<sup>26</sup>.

Considering the comments received and having discussed this item with the Review Group, the Agency decided to keep the AMC/GM on resilience development within the applicable framework as a new training element. Although the operator will not be able to influence the personality of trainees during CRM training, it might very well be possible to provide the trainees with new insight and better understanding related to their behaviour and appropriate changes thereof. The Agency is of the opinion that the training elements in general have to be specific to provide operators with necessary input to establish detailed training programmes. It is the understanding of the Agency that replacing ‘resilience engineering’ with ‘stress copying technique’ would simplify things. Furthermore, the Agency is expecting that indeed operators will have to invest some effort to make resilience development an effective CRM training element. This is not the responsibility of the rulemaking body. In this context, an example of a situation where resilience development applies does not seem to be necessary in the appropriate AMC/GM.

### **Surprise and startle effect**

In the NPA, the Agency introduced provisions on the surprise and startle effect for flight crew<sup>27</sup> and for cabin crew<sup>28</sup>. Similar to resilience development, 3 commentators proposed to delete the AMC/GM on the ‘surprise and startle effect’ completely<sup>29</sup>, while one commentator suggested deleting this training

<sup>21</sup> Paragraph (f)(3) and Table 1 of AMC1 ORO.FC.115, and GM4 ORO.FC.115.

<sup>22</sup> Paragraph (f)(1) and Table 1 of AMC1 ORO.CC.115(e), GM3 ORO.CC.115(e) and the table of AMC1 Appendix 1 to Part-CC(3).

<sup>23</sup> Comments Nos 29, 32, 261, 309 and 368 (some commentators provided more than one comment on the same subject).

<sup>24</sup> Comment No 52.

<sup>25</sup> Comments Nos 93, 133, 162, 211, 349 and 406.

<sup>26</sup> Comment No 297.

<sup>27</sup> Paragraph (f)(4) and Table 1 of AMC1 ORO.FC.115.

<sup>28</sup> Paragraph (f)(2) and Table 1 of AMC1 ORO.CC.115(e), and the table of AMC1 Appendix 1 to Part-CC(3).

<sup>29</sup> Comments Nos 56, 278 and 367.



element at least as training element for the introductory course for cabin crew<sup>30</sup>. One major reason for the proposed deletion is that according to the commentators' view a real surprise is not possible, since there has to be a standardised syllabus for all trainings, which will be known among crews eventually after commencement of the training.

In addition, 6 commentators, while generally supporting the surprise and startle effect as a new training element, emphasised that further work is needed in implementing effective training<sup>31</sup>. Finally, one commentator highlighted that CRM training in surprise and startle effect should be assigned to a Flight Simulation Training Device (FSTD) since in a classroom it would be difficult to effectively 'surprise' or 'startle' trainees. However, the same commentator added that case studies on the issue could be discussed in classroom<sup>32</sup>.

The Agency considered the comments and the additional input received, and came to the following conclusion: having especially in mind that several Safety Recommendations are related to the subject (see the discussion in the NPA), it was decided to keep the provisions on the surprise and startle effect. The Agency acknowledges that real surprise and startle might be difficult to achieve during training. However, an important aspect is to raise awareness. The basic principles and case studies might be studied in classroom, while practical exercises have to be performed in an FSTD. As for resilience development, the Agency is expecting that operators will have to invest some effort to make the 'surprise and startle effect' an effective CRM training element.

### **Proportionality**

In the context of proportionality, two issues have to be considered which may have to be separated:

1. small operator (e.g. one aircraft with one pilot);
2. 'small' aircraft (e.g. commercial air transport or commercial specialised operations with other-than complex motor-powered aircraft).

The Agency addressed these two issues by introducing the following measures in the NPA:

- The CRM training may be outsourced. Therefore, the operator may not need to establish any CRM training system itself<sup>33</sup>.
- For single-pilot operations, as well as for single cabin crew operations, simplified provisions have been proposed. Examples are the reduced minimum training times for the (initial) operator's CRM training and accepting computer-based training as a stand-alone training method<sup>34</sup>.
- Instructors for other-than complex motor-powered aircraft are qualified as flight crew CRM trainer for this aircraft category with no additional training<sup>35</sup>.

In addition, the Agency invited commentators in the NPA to specify explicitly where further adjustment may be appropriate to assure even better proportionality. Apart from one commentator who proposed a complete and coherent set of provisions for single-pilot operations, the Agency received no further

<sup>30</sup> Comment No 52.

<sup>31</sup> Comments Nos 93, 133, 162, 211, 349 and 406.

<sup>32</sup> Comment No 36.

<sup>33</sup> Paragraph (a)(9) of AMC1 ORO.FC.115.

<sup>34</sup> AMC2 ORO.FC.115 and AMC2 ORO.CC.115(e).

<sup>35</sup> Paragraph (c)(5) of AMC2 ORO.FC.115.



specific proposals in this context. The Agency itself further analysed the issue and decided to introduce the following main additional measure for single-pilot operations: for ELA2 aircraft<sup>36</sup> the relevant CRM training and its duration should be determined by the operator, based on the aircraft type and the complexity of the operation.

#### **Knowledge of relevant flight operations — flight crew CRM trainer vs cabin crew CRM trainer**

Based on the input received, the Agency established the following provisions concerning the knowledge of the relevant flight operations for CRM trainers:

1. Flight crew CRM trainer: ‘should have adequate knowledge of the relevant flight operations, preferably gained through current experience as flight crew member’<sup>37</sup>.
2. Cabin crew CRM trainer:
  - a. ‘should have appropriate experience of the relevant flight operations as a cabin crew member’<sup>38</sup>;
  - b. ‘an experienced non-cabin crew CRM trainer may become a cabin crew CRM trainer, provided that he/she fulfils [...] and demonstrates a satisfactory knowledge of the relevant flight operations and the cabin crew working environment’<sup>39</sup>.

The draft provisions show that a flight crew CRM trainer does not necessarily need to be a (former) pilot, while at first sight the draft provisions for cabin crew show that the CRM trainer need to have experience as (former) cabin crew member. However, as described under 2.b., even for cabin crew there is an exemption.

It should be noted that these provisions already exist, using a similar wording, in the framework of CRM training applicable today. The reason for these exemptions is to give, under specific circumstances, a person who has not an adequate licence the opportunity to become a CRM (classroom) trainer. For example, an aviation psychologist, not holding an adequate licence, might very well be able to provide classroom training on certain CRM issues.

However, 8 commentators:

- identified and questioned an imbalance between flight crew CRM trainer and cabin crew CRM trainer;
- raised concerns as regards non-flight crew CRM trainers, since they assume a lack of ‘a deep cultural understanding of flight operation environment’;
- consequently requested that flight crew CRM trainers have to have experience as flight crew members<sup>40</sup>.

<sup>36</sup> ELA2 aircraft are defined in Annex I to Regulation (EU) No 965/2012 as the following manned European light aircraft:

- an aeroplane with a maximum take-off mass (MTOM) of 2 000 kg or less not being a complex motor-powered aircraft;
- a sailplane or powered sailplane with an MTOM of 2 000 kg or less;
- a balloon;
- a very light rotorcraft with an MTOM of 600 kg or less with simple design, designed to carry not more than 2 persons, not powered by turbine and/or rocket engines, and restricted to VFR day operations.

<sup>37</sup> Paragraph (b)(2)(i) of AMC3 ORO.FC.115.

<sup>38</sup> Paragraph (a)(2)(i) of AMC1 ORO.CC.115(e).

<sup>39</sup> Paragraph (a)(3) of AMC1 ORO.CC.115(e).



On the other hand, 2 commentators stated that for them it would be desirable to give the possibility to new ground staff to gain CRM expertise through specific training and to become flight crew CRM trainers or cabin crew CRM trainers without being crew members<sup>41</sup>.

After further consideration, and after having discussed this item with the Review Group, the Agency decided that flight experience should not necessarily be a requirement to become a CRM trainer. Consequently, the text for cabin crew has been amended to be in line with the text for flight crew.

#### **Assessment — agreement with flight crew representatives**

The provisions on CRM training, as in force today, contain the following statement concerning the assessment of CRM skills: ‘In order to enhance the effectiveness of the programme, this methodology should, where possible, be agreed with flight crew representatives.’ In the NPA, the Agency proposed to delete this statement, but also asked the question whether the statement should stay or not (see the discussion in the Explanatory Note of the NPA). The explicit responses provided are documented in Table 2. It shows that 10 commentators (1 competent authority, 8 flight crew associations, and 1 individual person) are in favour of including the statement, while 6 commentators (1 competent authority, 1 manufacturer, 2 airline organisations, and 2 airlines) suggest to delete the statement.

**Table 2: Involvement of flight representatives in CRM training assessment**

Should a statement such as the following be included in the provisions concerning assessment of CRM skills?  <i>‘In order to enhance the effectiveness of the programme, the assessment methodology should, where possible, be agreed with flight crew representatives.’</i>	
Yes (number of comment in brackets)	No (number of comment in brackets)
FOCA (19, 20), A.L.P.L. (94, 126), N. Queiroz (134), ECA (163), FPA SSC (195), Vereinigung Cockpit (212), Austrian Cockpit Association (281), Austrian/Tyrolean Betriebsrat (342, 347), SNPL France Alpha(350), Betriebsrat NIKI (407)	Ryanair (39), Boeing (71), CAA-NL (123), IATA (288), AEA (328) Air Berlin (336)
<b>Total number of commentators: 10</b>	<b>Total number of commentators: 6</b>

Nevertheless, after further discussion the Agency finally decided to delete the statement. Such a statement might have been appropriate in the early years of CRM training, but nowadays it is in substance of no real use within a technical rule. This especially holds for a ‘just culture’ environment with an open form of communication and participation. Instead, State laws regulated agreements between company owners and employee representatives.

#### **Assessment — ‘validated and generally accepted method’**

<sup>40</sup> Comments Nos 5, 11, 12, 13, 16, 17, 18, 108, 148, 177, 226, 364 and 421 (some commentators provided more than one comment on the same subject).

<sup>41</sup> Comments Nos 315, 317, 371 and 377 (some commentators provided more than one comment on the same subject).



Concerning assessment, the following provision has been introduced in the NPA: ‘A validated and generally accepted method of assessment should be used. The non-technical skills (NOTECHS) framework is such a method’<sup>42</sup>. This provision triggered the following comments<sup>43</sup>:

- Apart from NOTECHS, what are the criteria for ‘a validated and generally accepted method’.
- If an operator’s own method of assessment has been approved by its national aviation authority (NAA) and is contained in its operations manual, then it is possible that this may be unique, not general.
- NOTECHS is an example of a validated and accepted method (but not the only one) and should, therefore, be transferred to GM level.

In response to these comments, the Agency emphasises that there are no fixed criteria for a method being ‘validated and generally accepted’. The Agency deliberately decided not to further specify any such criteria. It is always the operator that coordinates with the competent authority to come to a conclusion on a method which can be accepted. However, since the phrase ‘validated and generally accepted’ caused confusion, the Agency decided to amend it to ‘accepted method’ (this wording is used in the provisions applicable today). The competent authority, when approving the method, should decide what is ‘accepted’.

Based on the input received during the drafting of the NPA, the Agency decided at that time to mention NOTECHS in the AMC, and only this method, to have a link to GM5 ORO.FC.115, where NOTECHS is described in general terms. However, taking into consideration the comments received on the NPA and following the discussion with the Review Group, the Agency finally decided not to mention NOTECHS in the AMC. The GM on NOTECHS remains to provide some information on one assessment scheme to support the operator. Following the advice of the Review Group, no other assessment method is mentioned. This is since NOTECHS can be described as the only method with an ‘independent standing’ over a long period of time.

#### **Assessment/recurrent training — ‘reduction in safety margins’**

In the NPA, the Agency proposed to introduce the following statement concerning the assessment: ‘Assessments should include behaviour that contributes to a significant reduction in safety margins’<sup>44</sup>. Corresponding to this text, for recurrent training, the Agency proposed in the NPA to add to the phrase ‘CRM assessment alone should not be used as a reason for a failure of the line check’ the following text: ‘unless the observed behaviour contributed to a significant reduction in safety margins’<sup>45</sup>.

In total, 10 commentators raised serious concerns related to the phrase ‘behaviour that contributes/contributed to a significant reduction in safety margins’<sup>46</sup>. The main justification for these concerns is that the proposed text makes the CRM evaluation subjective and may include the potential to abuse the system. As a consequence, the commentators strongly oppose using CRM to fail or pass a

<sup>42</sup> Paragraph (h)(2) of AMC1 ORO.FC.115.

<sup>43</sup> Comments Nos 285, 312, 313, 369 and 370.

<sup>44</sup> Paragraph (h)(6)(iii) of AMC1 ORO.FC.115.

<sup>45</sup> Paragraph (b)(3)(iii) of AMC1 ORO.FC.230).

<sup>46</sup> Comments Nos 9, 10, 14, 15, 124, 125, 153, 154, 184, 185, 248, 249, 341, 386, 387, 426 and 427 (some commentators provided more than one comment on the same subject).



pilot without a clear, objective impact on the overall performance and based only upon a subjective 'safety margins' definition.

In contrast to the position described above, one commentator supported the inclusion as proposed by the Agency for recurrent training<sup>47</sup>. Finally, one commentator suggested amending the proposed text for recurrent training as follows: 'CRM assessment alone should not be used as a reason for a failure of the line check, unless the observed behaviour, without doubt and alone, contributed to a significant reduction in safety margins'<sup>48</sup>.

The Agency, based on the input of the Review Group, finally decided to amend the text to be in line with an appropriate statement in ICAO Doc 9995<sup>49</sup> as follows:

- Assessment: 'Assessments should include behaviour that results in an unacceptable reduction in safety margins'; and
- Recurrent training: 'CRM assessment should not be used as a reason for a failure of the line check, unless the observed behaviour could lead to an unacceptable reduction in safety margins'.

#### **Assessment of cabin crew**

In the NPA, the Agency proposed to request the assessment of flight crew in the operational environment, but not introduce assessment for cabin crew. 8 commentators made it clear that in their opinion cabin crew should also be assessed<sup>50</sup> since:

- the Agency's proposal 'creates a lack of consistency and bad quality of safety regulation', given the specific and important safety role of cabin crew;
- just to train CRM to cabin crew does not necessarily mean a proper implementation.

In contrast, one commentator supported the Agency's position<sup>51</sup>, mentioning that many large operators (in the US) do assess and even evaluate their cabin crews on a voluntary basis.

After further discussion, the Agency decided not to amend its initial position, namely not to require assessment for cabin crew. The main reason is still that an assessment of cabin crew at the present stage would be considered as overregulation. It should be noted, however, that the Agency rephrased the provisions on the senior cabin crew member course to emphasise that senior cabin crew members have to demonstrate certain abilities during the training.

---

<sup>47</sup> Comment No 296.

<sup>48</sup> Comment No 196.

<sup>49</sup> International Civil Aviation Organization, 'Manual of evidence-based training', ICAO Doc 9995-AN/497.

<sup>50</sup> Comments Nos 107, 147, 176, 225, 281, 291, 363 and 420.

<sup>51</sup> Comment No 79.



### 3. Individual comments and responses

In responding to comments, a standard terminology has been applied to attest the Agency's position. This terminology is as follows:

- (a) **Accepted** — The Agency agrees with the comment and any proposed amendment is wholly transferred to the revised text.
- (b) **Partially accepted** — The Agency either agrees partially with the comment, or agrees with it but the proposed amendment is only partially transferred to the revised text.
- (c) **Noted** — The Agency acknowledges the comment but no change to the existing text is considered necessary.
- (d) **Not accepted** — The comment or proposed amendment is not shared by the Agency.

<b>(General comments)</b>	-
---------------------------	---

comment

72

comment by: *Swiss International Airlines / Bruno Pfister*

Swiss Intl Air Lines takes note of the NPA 2014-17 without further comments.

response

Noted.

The general support of Swiss International Air Lines is appreciated.

comment

123

comment by: *CAA-NL*

The Netherlands has 2 general comments to make:

1. The Netherlands generally agrees with the proposals in this NPA but has the following remarks to make:

- The more prescriptive aspects of the set of rules on CRM are in the soft law and this provides in principle for flexibility for the industry in complying with the rule, a principle which we support.

- The flexibility mentioned above should go together with an performance based implementing rule (hard law) itself where the required performance or the desired outcome is clearly defined. Unfortunately the ToR of this working group confined the work to AMC/GM only, so the rule were this new AMC/GM is applicable to is still not performance based.

- As 'alternative means of compliance' only have to be tested against the implementing rule they mean to comply with, the current situation still leaves room for alternative means of compliance to be developed without a desired outcome of required performance being defined. With the rule as it is now, it is not guaranteed that alternative means of compliance are equivalent to the now proposed AMC's.



2. In the explanatory note of the NPA on page 14 of 79, EASA asked commentators their opinion about the role of flight crew representative and the related statement in the current regulatory framework. The Netherlands is of the opinion that the such a statement was appropriate in the early years of CRM training but nowadays it is in substance of no use in a technical rule. In the discussion about 'performance based rules', introduction of 'safety management systems' and 'just culture' it is the operator responsibility to share or agree this kind of information with all the flight- cabin- and technical (medical) crew representatives.

response

Noted.

The general support of CAA-NL is appreciated.

On No 1: There is a well-established procedure in place to ensure that Alternative Means of Compliance (AltMOC) are conducted in accordance with the Implementing Rules (ARO.GEN.120). Following this procedure, the competent authority shall evaluate and decide on the AltMOC provided by the applicant.

On No 2: The Agency takes note of the position of CAA-NL.

comment

188

comment by: *NaviMinds I/S*

Attachment [#1](#)

response

Noted.

The general support of NaviMinds I/S is appreciated.

comment

252

comment by: *EUROCONTROL*

#### General comment

EUROCONTROL wants to make a preliminary comment on CRM Training on the basis of its experience in training in another area, namely the area of Team Resource Management (TRM) in Air Traffic Management (ATM).

There is no doubt that the philosophy of CRM training is considerably different from the philosophy of TRM training in ATM. However, we believe that CRM can profit a parallel drawn with ATM TRM training, where a distinction is made between teaching Human Factors and facilitating TRM.

In the teaching of the HF part, the trainer or instructor passes a knowledge package to students/controllers and this knowledge can be evaluated at the end of the training session. In TRM sessions, however, it is the students/controllers themselves who have to assimilate their knowledge into operational situations where they find themselves in, using the resources available. It is admittedly more challenging to evaluate TRM training than HF training in these situations, but the knowledge retention value and commitment to change is higher under the latter situation.



More specifically, drawing a separation between teaching of Human Factors and CRM facilitation could help CRM training to become more associated with the initial meaning of crews who have to manage the resources available, and be less associated with a training that is mandated by "Europe".

response

Noted.

The comment from EUROCONTROL is appreciated. During the drafting of the NPA, EUROCONTROL provided a presentation on Team Resource Management (TRM) in the area of Air Traffic Management (ATM) (Meeting No 3 of the Agency's Rulemaking Group on 20–21 February 2013). With this presentation, and the subsequent discussions, the Rulemaking Group became aware of the commonalities but also of the differences between TRM and CRM.

comment

289

comment by: *Austro Control*

### 1. Page 22/46

AMC1 ORO.FC.115 (6)(ii) and AMC1 ORO.CC.115 (6)(ii) Paragraph should be changed as follows:

Comment/Proposed text: "The minimum hours should be extended when evidenced ...demonstrate problems in the cooperation..."

Justification: Likelihood that operators qualify system as faultless in order to save costs.

### 2. Page 25/49

Paragraph: AMC1 ORO.FC.115 (g) (1)

AMC1 ORO.CC.115 (e)(g)(1) :

Comment/Justification: Definition for "required" CRM Topics leaves room to interpretation regarding the methodology.

Proposed text:

"Required" means training that should be instructional and interactive in style to meet the objectives specified in the CRM training program and to refresh and strengthen knowledge gained in a previous training.

### 3. Page 52:

Paragraph AMC2 ORO.CC.115 (e) (b):

Comment: Duties of a single cabin crew are more complex than duties as cabin crew in multi crew operation (should really be equal to the requirements for senior cabin crew CRM training).

Safety is compromised if syllabus is reduced to the contents specified in (b). Also, instruction time should not be reduced. We consider CBT only as an add-on method to the - in our view essential- method of classroom training.

Basic CRM Training for single cabin crew should include combined training with flight crew.

Justification: Single cabin crew members practically face the same challenges as senior cabin crew members. (Why should e.g. stress management not apply to single cabin crew members)

Proposed text:



Align text for senior cabin crew members with text for single cabin crew members in table 1

**4. Page 28 :**

Paragraph AMC2. ORO: FC.115 (3)(4) :

Comment: Safety is compromised if syllabus is reduced to the contents specified in (3). Also, instruction time should not be reduced. We consider CBT only as an add-on method to the - in our view essential- method of classroom training.

Justification: A single pilot also has to cover some items relating to passenger interaction (leadership, ect.)

Proposed text:

Align text for single pilot with text in table 1. No reduction of training time.

**5. Page 30/53:**

Paragraph AMC3 ORO.FC.115 (2)(i)(ii) and AMC3 ORO.CC.115 (e)(b)(2):

Comment:

Training -timeframe too extensive.

Justification:

Basic qualification (AMC3 ORO.FC.115 (b) and AMC3 ORO.CC.115 (e)(a)) covers already a wide field of subject-matter related knowledge. System should be "digestible" for the industry.

Proposed text:

16 h for (i)

24 h for (ii)

**6. Page 31/54:**

Paragraph: (AMC3 ORO.FC.115 (f) AMC3 ORO.CC.115 (e))

Comment:

Wording "CRM trainer examiner" is misleading

Justification:

Refer to comment

Proposed text:

Use two categories:

CRM trainer

Examiner for CRM trainer

and clearly define their scope of activities.

General comment:

Which records are sufficient as a basis of grandfathering previous CRM trainer qualification?

Unclear definition of who will observe the examiner (refer to AMC3 ORO.FC.115 (f) (3) (iii) and AMC3 ORO.CC.115 (e) (e) ... examiner should be observed by the operator.....

Proposed text:

Examiner should be observed within the framework of the operator's compliance monitoring and safety audits.

response Partially accepted.

**On No 1:**



Not accepted. After further consideration and discussion with the Review Group, the Agency decided not to include any statement on neither reducing nor increasing the minimum training time. Please refer to the discussion on minimum training times in Chapter 2 of this CRD.

**On No 2:**

Accepted. The text has been amended accordingly.

**On No 3:**

Not accepted.

It has to be noted that the reduced minimum training times are only applicable for single cabin crew operations for aircraft with a minimum operational passenger seating configuration of 19 or less, i.e. when no cabin crew is required on board. The same holds for the provision concerning computer-based training as a stand-alone method.

Concerning basic CRM training for single cabin crew, the Agency decided to leave it to the operator to which extent this training should include combined training.

Paragraph (b) of AMC1 ORO.CC.115(e) of NPA 2014-17 does not exclude 'stress management'. The wording was carefully chosen ('Therefore, single cabin crew CRM training should include, **among others**:...') and then listing items to which special attention should be given.

Following the reasoning described above, the Agency decided not to align the text on senior cabin crew with the text on single cabin crew.

**On No 4:**

Not accepted. Please refer to the discussion on computer-based training and on minimum training times in Chapter 2 of this CRD.

**On No 5:**

Partially accepted. The training times have been reduced. Please refer to the discussion on minimum training times in Chapter 2 of this CRD.

**On No 6:**

Noted. After further discussion, the Agency decided to delete completely the draft AMC for CRM trainer examiners. Instead, the responsibility of the operator for the assessment and monitoring of CRM trainers is emphasised in the AMC, and GM is introduced suggesting that the assessment of CRM trainers is conducted by experienced CRM trainers.

comment

294

comment by: *DGAC France*

DGAC France supports the overall objective of this NPA, built on safety recommendations, experience gained and common practice, and considers that it represents an important step towards the full integration of CRM with flight and cabin crew training. However there are some concerns that the proposed material seems essentially tailored for commercial air transport by aeroplanes and helicopters and does not take into consideration the specificities of other types of operations.

1) DGAC France is concerned about the applicability and thus the proportionality of the CRM



requirements applicable to flight crew proposed in this NPA. Indeed, acceptable means of compliance and guidance material presented in this document mainly refer to the implementing rule ORO.FC.115, applicable to both non-commercial operations of complex motor-powered aircraft and any commercial operations (as specified in ORO.FC.005 Scope). In the overview of the proposed amendments it is highlighted that measures were taken to ensure that the provisions are proportionate to the risks of operations with the aircraft category. However, even with the proposed considerations for single-pilot operations, several requirements still seem quite disproportionate and hardly applicable to small and medium operators usually involved in operations such as commercial air transport by balloons or commercial specialised operations with other than complex motor-powered aircraft. Among those requirements can be listed for instance: the systematic assessment of CRM skills (AMC1 ORO.FC.115 (h)), criteria for the qualification of flight crew CRM trainers (AMC2 ORO.FC.115 (b)), assessment of flight crew CRM trainer (AMC2 ORO.FC.115 (d)), criteria regarding the recency and renewal of qualification as flight crew CRM trainer (AMC2 ORO.FC.115 (e)) and requirements applicable to flight crew CRM trainer examiner (AMC2 ORO.FC.115 (f)). Fulfilling these requirements would represent an important and new burden for these operators, in terms of administrative work and availability of qualified resources.

Thus, DGAC France believes that a complete and coherent set of requirements applicable to single-pilot operations should be proposed. Also, requirements applicable to single-pilot operations with aeroplanes and helicopters in commercial air transport could be set separately.

2) In relation with the previous comment, DGAC France would like to express reserved views concerning the repartition of the requirements proposed in this NPA. When considering subpart ORO.FC, CRM requirements for flight crew appear in several implementing rules: in ORO.FC.115 which belongs to section 1 applicable to all operators and in ORO.FC.215, ORO.FC.220 (a) and ORO.FC.230 (e) which belong to section 2 only applicable to commercial air transport by airplanes and helicopters. The intention of the regulation, when distributing those CRM requirements among different sections, was to guarantee some proportionality in regards of the type of operation and aircraft. However in this proposal, since all acceptable means of compliance related to ORO.FC.215 (section 2) have been linked to the acceptable means of compliance ORO.FC.115 (section 1), the intention of the regulation has not been followed.

Moreover, ORO.FC.215 requires “an initial CRM training conducted by a suitably qualified CRM trainer” while ORO.FC.115 only requires that “flight crew member shall have received CRM training, appropriate to his/her role, as specified in the operations manual”. However, acceptable means of compliance for an initial CRM training and qualification of CRM flight crew trainer (required by ORO.FC.215) have been linked to ORO.FC.115 in the proposal. In order to respect the hierarchy of norms, those acceptable means of compliance should therefore be removed from AMC1 ORO.FC.115 and included in AMC1 ORO.FC.215.

3) Finally, DGAC France believes that the scope of the proposed AMC3 ARO.GEN.200(a)(2) describing the qualification and training of inspectors of the competent authority conducting oversight of the operator’s CRM training should be limited to the oversight of operations that are within the scope of section 2 of subpart ORO.FC. Those requirements would be too stringent if they were to be applied to other types of operations. Since only flight operations inspectors will meet these criteria, audits and/or inspections performed on declared or authorised operators would pose serious issues in terms of availability of qualified resources.

response Partially accepted.



The general support of DGAC France is appreciated.

**On No 1:** In the NPA, the Agency invited stakeholders to specify where in their opinion further adjustments may be appropriate to consider the needs of small operators and operators of other-than complex motor-powered aircraft (see No 10 of paragraph 2.4 of the NPA). The Agency thanks DGAC France for identifying items to be further considered, which were considered during the discussions of the Review Group. However, it should be noted that operators do not need to establish the complete 'CRM system' themselves. Operators may decide that CRM training courses are provided by contracted training organisations which then have to establish the system as prescribed (see e.g. paragraph (a)(9) of AMC1 ORO.FC.115 of the NPA). Therefore, the Agency does not see the need to establish a completely separate set of provisions for single-pilot operations and another, separate set of provisions for single-pilot CAT operations.

**On No 2:** This issue was discussed in depth during the process of establishing the amended provisions. The Agency, supported by the Rulemaking Group, finally came to the conclusion that all flight crew CRM related specific issues should be covered under 'one roof', and should not be split up. However, links are provided as necessary. Since the Agency deliberately intends to prescribe CRM training not only for CAT operations but for all operations where Part-ORO is applicable, the text of AMC1 ORO.FC.115 cannot be moved to AMC1 ORO.FC.215 (the latter being applicable to CAT operations only). Possible inconsistencies of the Implementing Rules (ORO.FC.115 vs ORO.FC.215) cannot be rectified by the present Rulemaking Task, but will be considered by the Agency in the future.

**On No 3:** The intention is to increase the standard of oversight. This includes increased requirements in terms of availability of qualified resources. The Agency does not agree that the competent authority oversight should be limited to CAT operations.

comment

383

comment by: AEA

**General remark:**

General consideration on the qualification of flight or cabin crew CRM trainer.

There is a requirement in AMC3 ORO.FC.115 (b) and AMC3 ORO.FC.115(e) (a) for the CRM trainer to be trained in human performance and limitation (HPL) and group management, group dynamics and personal awareness. There is a lack of guidance, recognized standards in these fields, on the aviation side. No clear view on who is entitled to give such training.

response

Noted.

The responsibility is given to the operator, upon agreement of the competent authority, to decide how this training is provided.



comment

87

comment by: FAA

## Overall Comments

This is a finely crafted and well thought out strategy for addressing contemporary Crew Resource Management (CRM) training and assessment issues. There is a strong consistency of fundamental CRM competencies across this document and recent ICAO initiatives, to include Evidence Based Training (EBT) and the Multi-crew Pilot's License (MPL), as well as the non-ICAO Non-Technical Skills (NOTECHS) system. This level of consistency has not always been achieved in the past and speaks well to global harmonization.

In broad outline the FAA will be charting a very similar course in the future, although some areas of focus will vary, to include the use of assessment and evaluation, the nature of resilience development and the approach to combined training events.

response

Noted.

The positive feedback from the FAA is appreciated.

comment

281

comment by: Austrian Cockpit Association

ACA kommt gerne der Aufforderung nach, NPA 2014-17 über Änderungen im Bereich CRM zu kommentieren.

Wir begrüßen viele positive Veränderungen und detaillierte Regulierungen. Damit wird CRM unserer Meinung nach aufgewertet und das im Sinn der Erkenntnisse aus praktisch allen Unfall/Vorfall Berichten der letzten Jahre.

Einige Punkte stellen aber auch signifikante Rückschritte dar. Gemeinsam mit ECA (European Cockpit Association) haben wir wesentliche Punkte herausgearbeitet:

- 'Assessment of CRM Skills' kommt an mehreren Stellen vor und ist in der beschriebenen Form äußerst problematisch. Bis eine nachhaltige Überarbeitung der Passagen die auf 'Assessment of CRM Skills' Bezug nehmen erfolgt, müssen wir das 'Assessment of CRM Skills' vehement ablehnen. Diese Haltung bedeutet keine generelle Ablehnung von CRM Beurteilungen sondern bezieht sich auf die in NPA 2014-17 beschriebene Vorgehensweise.
- Die Einbeziehung von 'Flight Crew Representatives' (wo vorhanden) hat sich in der Vergangenheit bewährt und - im Airline Bereich - wesentlich zur Akzeptanz von CRM beigetragen. Unserer Meinung sollten die diesbezüglichen Passagen beibehalten werden.
- Eine Lizenz, bzw. behördliche Akkreditierungsliste sehen wir als unbedingt erforderlich an. Einerseits wird die CRM Trainer Ausbildung ausgeweitet (ist sehr positiv), CRM Trainer müssen 'recency' und 'supervision' nachweisen, andererseits wird ihnen jeder vorzeigbare Qualifikationsnachweis verweigert.
- Wenn ein akzeptables 'Assessment of CRM Skills' ausgearbeitet ist, sollen Cabin Crew Members dem genauso unterworfen sein wie Piloten. Das bedeutet auch eine Anerkennung der wichtigen Sicherheitsfunktion von CC's. Im Fall von single CC ist



response

dieses 'Assessment of CRM Skills' auch eine gute Gelegenheit der Standardisierung.

- (Minimum) Zeitrahmen für alle CRM Trainings stellen eine Notwendigkeit dar, da sonst eine Erosion von CRM Trainingsaufwand stattfinden könnte.

Partially accepted.

The general support of the Austrian Cockpit Association is appreciated. For bullet points Nos 2 (assessment — 'agreement with flight crew representatives'), 4 (assessment of cabin crew) and 5 (minimum working times), please refer to the discussion in Chapter 2 of this CRD.

Concerning No 1 (assessment — general) please refer to the discussion on the specific aspects of the assessment in Chapter 2. Concerning No 3 (licence), the Agency came, after substantial discussions, to the conclusion not to introduce an accreditation process (see e.g. response to comment No 101).

Teilweise akzeptiert.

Die grundsätzliche Unterstützung der Austrian Cockpit Association wird begrüßt. Bezüglich der genannten Punkte Nr. 2, 4 und 5 verweist die Agentur auf Kapitel 2 dieser CRD. Bezüglich Punkt Nr. 1 (Beurteilung - allgemein) wird auf die Diskussion der spezifischen Aspekte der Beurteilung in Kapitel 2 dieser CRD verwiesen. Bezüglich Punkt Nr. 3 (Lizenz) sei vermerkt, dass die Agentur nach eingehender Diskussion zu dem Ergebnis gekommen ist, kein Verfahren zur Akkreditierung einzuführen (siehe z.B. die Antwort zu Kommentar Nr. 101).

## 2. Explanatory Note

p. 5-7

comment

28

comment by: *ATF - Awareness Training Fakoussa*

The objective of this training should be to improve the personal resource management and not that of the crew. The minimum unit of a crew is a person. Any person within a crew as well as in single pilot operation or as a lonely mechanic can produce human error. Therefore the aim is to motivate the individual person to improve its own performance to be able to support a crew or team. To clarify the objective of non technical skills training I suggest to change from CRM to PRM = Personal Resource Management.

Under 2.1. we find flight crew handling/skill.. that is wrong. it is not the flight crew but one pilot/cabin attendant of the crew that causes the fatalities, and for the second person, not enough assertiveness for various reasons. Under CRM skills this would not be a topic, but under PRM my individual handling skills and my assertiveness ARE valuable topics, which target the real individuals cause and makes clear where the changes have to take place.

Under 2.2. flight crew perception .... is wrong, as both pilots see individually and subjectively different things, so again PRM is the better title

The same applies for situational awareness and certainly for decision making

Also in the ICAO eight core competencies we find terms that point to a single persons



abilities like communication, control (manual and automatic), leadership etc.

So from the logic of the cause of failure we have clear indication that it is the single persons resources that require improvement. So PRM - Personal Resource Management should be EASA choice for the future for any non technical skills / abilities training.

TEM

Threat and Error Management encompasses academic terms for analysis and categorization of people's behaviour. All mentioned threats have been part of aviation since it started. Knowing that they exist and that the reaction has certain categories does not improve an individual's reaction. Knowledge in general is not enough for a person's resources improvement. We all want to be perfect pilots and we know what to do in theory. But in daily life we vary in our reaction in an individual way, which is not predictable either. The motivation to the application of the knowledge is what a PRM training should and can achieve.

So TEM as a list of possibilities and theoretical reactions should be eliminated completely in PRM training and left to accident investigation. That is where it is useful.

response

Not accepted.

'CRM' is a well-established term in aviation regulation and, therefore, should be kept. As one can see (for example, from Table 1 of AMC1 ORO.FC.115), CRM training elements include elements relevant to the individual flight crew member (= personal resource management), but also elements relevant to the flight crew and to the entire aircraft crew. So, CRM training can be seen as the overarching term which includes PRM. The intention is not only to improve PRM, but to improve the capabilities of the entire crew when working together. TEM and its relationship to CRM is described in Chapter 2 of the NPA.

comment

74

comment by: FAA

Pages 6 and 10. Page 10 states that the overarching goal of CRM is risk management. This is probably a better goal statement than the one on page 6, which states that the goal of CRM is to manage threats and errors. Threat and error management is a more limited concept. TEM is over a decade old and more complex competing frameworks, such as risk and resource management (RRM) are already in use by US pilots.

response

Noted.

The Agency appreciates that the FAA provides information concerning the different terms used.

comment

190

comment by: Cathay Pacific

Threat and Error Management (TEM)



The preamble to the NPA attempts to integrate TEM and CRM. In fact, TEM was developed as a way to describe the LOSA process. Helmreich and his research team explain that TEM is the framework within which data is collected (the LOSA 'road map') and this operational data is then used to inform the design and delivery of CRM. At some point, TEM seems to have become synonymous with CRM or, indeed, has superseded it simply on the grounds that 'it is more modern'. One version of the 'generations model' actually states that 'CRM is error management'. The 'overarching concept' theme comes from various versions of presentations by Helmreich/Maurino subsequent to the wholesale adoption of TEM by ICAO. Unfortunately, there does not appear to be an elaboration of TEM as a domain or discipline such that it can be used to develop training. Apart from a set of definitions of categories ('threat' 'error', 'undesired aircraft state'), TEM does nothing beyond providing the local context for a discussion of pre-existing CRM themes.

The NPA also incorporates ideas from resilience engineering. The concept of resilience is at odds with the idea of TEM. Error, as a state or condition, is under review (see Dekker, Woods et al). Error can only be known after the event but, at the time an individual is engaging with work, they are not committing 'an error', rather, their goal-directed behaviour is inadequate, the degree of mismatch only becomes known with hindsight.

In 2013, my airline conducted a LOSA. 29% of errors were not detected by the crew. 17% of errors were considered to be intentional non-compliance under the LOSA concept but, on closer inspection, were found to be attempts by crew to create new solutions to operational problems in real time. In short, 'error' can be seen to be a proactive attempt to sustain operations. Only 20% of errors were linked to 'threats'.

Because LOSA is an audit and requires observers to assign observations to categories, the classes of 'threat', 'error' and 'outcomes' are static taxonomies that bear no relation to the way crew process the operational environment and create courses of action.

Therefore, we suggest that 'Threat and Error Management' be removed from the training requirement on the grounds that it has no substance and nor does it add any additional concepts to the CRM domain that are not already covered.

We accept that LOSA is a useful tool for providing ecological validity for airline CRM but the relationship between TEM and LOSA needs to be re-established.

response Not accepted.

The explanation given is appreciated. During the establishment of the draft provisions, it was discussed in depth whether or not to include TEM as a training requirement. The Agency's Rulemaking Group finally agreed to include TEM under 'General principles' (see, for example, Table 1 of AMC1 ORO.FC.115), and then to leave it to the operator how to implement TEM in its training map.

comment 230

comment by: ECOGAS/SVFB/SAMA

**ECOGAS represents mainly but not only Small and Medium Enterprises, focusing mainly on maintenance.**

*ECOGAS includes the business of manufacturing, supplying, maintaining and overhauling GA aircraft and parts, providing other GA support services, operating GA aircraft for professional*



and private flying training and other commercial purposes.

ECOGAS supports the NPA in general as CRM is a proved concept within CREW's as the name implies.

In this submission we limit ourselves to the expansion of rulemaking to Maintenance Crew, mainly with the focus on SME's. **BUT.....**

**SME in the definition of the EU are**

Company category	Employees	Turnover	or	Balance sheet total
Medium-sized	< 250	≤ € 50 m		≤ € 43 m
Small	< 50	≤ € 10 m		≤ € 10 m
Micro	< 10	≤ € 2 m		≤ € 2 m

**AND....**

The cited UK CAA document "Global fatal Accident review 2002 to 2011" does correctly not even mention maintenance as a driver or in any way as a causal factor.

Elsewhere there is 15% maintenance mentioned. This is considerably less in maintenance below mass transport level and accidents based on missing CRM tend towards zero in the case of **SME's**.

We miss statistical relevant data to justify expansion into maintenance of SME's, regardless of their involvement in CAT.

The same is true in the case of the EHEST study in an area which is even more prone to Maintenance error causal factors due to the mechanical complexity and sensitivity of Helicopters.

But even here accidents caused due lack of CRM within SME's are not evident and we claim lack of substantiation.

ICAO makes no mention of lack of CRM as causal factor for accidents either.

Footnote 6 in ref to the FAA: **Air Carriers**.

A similar study for the non Mass Transport Sector is not available. However regulation must be risk based: neither the risk not the benefit of CRM is quantified in any reliable study for the **non Air Carrier Sector**

response Noted.

The information provided by ECOGAS/SVFB/SAMA is appreciated. Concerning maintenance, there must be a misunderstanding: the proposed provisions do not include this area. Concerning proportionality, please refer to the discussion in Chapter 2 of this CRD.



**2. Explanatory Note - 2.1. Overview of the issues to be addressed**

p. 7-11

comment 29

comment by: ATF - Awareness Training Fakoussa

**CRM/PRM trainer** is in fact an instructor. There is usually no real practical training involved like we have in the flight/cabin simulator apart from some group games. So the classroom instructor explains in theory how I could manage MY resources, which I then use to manage my crews resources. The type rating instructor or examiner should than TRAIN those PRM skills and abilities. And the type rating or flight instructor is in that case the actual trainer of the PRM skills and abilities. same for cabin personnel.

**Startle factor** is nothing new. It is already part of HPL and is covered under the title stress and overload. It appears also in PRM /CRM under fixed pilot syndrome and we do not need new words for old known subjects. That leads to confusion and certainly not to behavioral changes.

**Standardize CRM/PRM training?**

Any PRM instruction has to be customized to the operators culture, adapted to his operation and adjusted on a daily basis to the groups interest, motivation and needs (incident/accident/possible bankruptcy of the operator etc). Yet the instructor has to achieve the goal of motivating the participants to change their attitude, skills, and abilities. This is called controlling a group dynamic process and thus leading the participants to actively change their behaviour. To ask such a complicated process to be standardized shows little understanding of the ingredients' necessary to handle a course in a flexible way and it is impossible to standardize when facing the daily problems of crews.

Here we are not dealing with CRM procedures or SOPs, but with individuals that change their behavior in an unpredictable way. The solution is not standardized courses but much better training of the trainers to be able to handle group dynamic processes successfully.

The instructor or trainer have to switch anyway between different roles and need to be moderators and facilitators also.

**Concerning Safety Recommendation FRAN-2012-042:**

The tools to help people to react in a self-controlled way are already part of PRM training but only very few instructors know about it. Any kind of relaxation training and in combination with mental training will improve the individual's skills. Again this is not crew but personal training.

**Concerning Safety Recommendation FRAN-2012-043:**

This is a contradiction in itself. EASA wants the standardized training and at the same time wants to control highly charged emotional factors, which are completely individual? How do you train emotional control in a classroom? Today's CRM trainers will not be able to do such a training, and certainly not in a standardized way.

So again, if the future PRM/CRM trainer has acquired skills himself to be able to control his emotional outburst, then he can convince in a group dynamic process the participants. But



the pure knowledge without practical personal proof is not convincing.

**Concerning Safety Recommendation FRAN-2013-019**

The different safety recommendation keeps repeating the same, what can be done to reduce the stress level in unexpected situations? The answer is: a special mental and relaxation training will help participants to stay in control of oneself. It is not yet part of CRM but I use it in my PRM successfully for 25 years now. The problem is that aviation is male dominated and men are more resistant to change to new tools.

Resilience is just a new word for staying self-controlled. It is neither a tool nor a prescription. It is just a term derived from the technical world and now being used to show activity in that field where no results have been achieved through normal standardized CRM courses. It should be deleted by EASA as it is useless in aviation. In healthcare it can be used in a helpful manner.

The present AMC and GM can be kept and just expanded to be more flexible and should include the practical training of self-control.

CBT is in itself a contradiction to emotional control training. CBT can be used as a reminder and refresher for tomorrow's course. But as a standalone it will have no effect at all.

A checklist for the control of group dynamic processes is absurd. Either the inspector is an expert and understands what he sees and hears or otherwise he checks what he doesn't understand any way. This is mainly the case nowadays.

For the training environment I suggest that the maximum number of participants should be restricted to an acceptable level (max. 15). Sometimes the money effect makes instructing impossible.

response Partially accepted.

The Agency appreciates the fact that the commentator provided their opinion on various items. Concerning resilience development and computer-based training, please refer to the discussion in Chapter 2 of this CRD. In contrast to the commentator, the Agency is of the opinion that the checklist for CRM training oversight (GM3 ARO.GEN.300(a);(b);(c) in the NPA) may be seen as a useful tool for an inspector.

comment 70

comment by: Boeing

Page: 10

Paragraph: **Items which Were Incorporated**

**The proposed text states:**

*"In detail, the Agency — based on the input received — proposes to incorporate the following new items in the AMC and GM on CRM training:*

...

*— provisions concerning computer-based training;"*

..."



**REQUESTED CHANGE:** Add a new item to this paragraph titled:

**[“— video scenario analysis and discussion;”](#)**

**JUSTIFICATION:** We find that one of the most effective means of training in CRM is via observation and analysis of video recordings (produced in full flight simulators) of CRM situations. This should be included in the NPA. In many cases, video is more effective than “Computer-based training (CBT)” for CRM training.

response

Not accepted.

Video scenario analysis and discussion is nowadays already used in classroom, FSTD and computer-based training. The Agency is of the opinion that there is no need to mention it explicitly.

comment

73

comment by: FAA

Pages 10-11 list the 16 “main measures” required to improve CRM training guidance. These 16 are addressed in turn:

1. Qualification and training for inspectors of competent authorities

Will there be requirements for certain inspectors to be trained by and under the CRM program of the certificate holder they oversee, as well as by their own agency?

In the case of competency-based systems (Advanced Training and Qualification Program-ATQP, EBT, etc.) where training may be customized to each certificate holder, will the regulator be required to provide its inspectors additional training, or will that be the responsibility of the certificate holder?

2. Checklist for oversight of CRM training by inspectors of competent authorities

Checklists may be more useful for the procedural aspects of CRM, but might have less utility at the softer end of the soft skills continuum. Perhaps an “inventory” of skills might be a better description than a “checklist”. In aviation the term “checklist” usually implies a high level of precision.

3. Provisions concerning computer based training

Limiting the use of computer-based training to single pilot operations, where other flight crew members are not present, is very reasonable based on today’s technology, but may need to be reconsidered as more virtual training environments evolve in the future.

4. Expansion of combined CRM training

In addition to mandating actual combined training, certificate holders might be encouraged to engage in joint planning (design and development) of non-combined CRM training as well.

5. CRM training and management system

No comment.

6. Competency-based CRM training

The EASA, ICAO and FAA positions here are identical. Airlines should be able to remain in a



compliance-based program, but permitted to transition to a competency-based program.

Encouraging, but not requiring, competency-based CRM training has worked well in the US for over 20 years. No airline that has transitioned from compliance-based to competency-based training (to include CRM) has elected to transition back to compliance-based training, although they are always free to do so.

In the US there seems to be a natural break point in terms of the size of an airline. The vast majority of US airlines with over 500 pilots have transitioned from compliance-based to competency-based training, while the vast majority of airlines with fewer than 500 pilots have remained with the compliance-based model.

7. Monitoring and intervention

No comment.

8. Resilience development

The US is in the early stages of examining the place of resilience training in the CRM curriculum and will monitor the European experience very closely.

9. Surprise and startle effect

The FAA is currently conducting research in the areas of startle and surprise and will coordinate with EASA on future findings. Surprise has been a key component of line oriented flight training and line operational evaluations for some time, but startle has not.

10. Effective communication and coordination with personnel outside the aircraft

Because in the US, unlike Europe, dispatchers share responsibility with the pilots for the safety of a flight, dispatch resource training (DRM) is relatively mature. Beyond that the FAA provides little guidance and will benefit from EASA's efforts.

11. CRM training for single pilot operations and for single cabin crew operations

The FAA recently mandated CRM for its part 135 on-demand operators, many of whom are single pilot operations. This is leading to new guidance material on single pilot and cabin crew operations. This EASA guidance will be very helpful.

12. Qualification, training, assessment and recency of CRM training

No comment.

13. Qualification of CRM trainer examiner

No comment.

14. Training environment , flight crew CRM trainer vs flight crew instructor

No comment.

15. Design, delivery and evaluation of CRM training.

Although the document makes clear that CRM will be assessed (critically observed) but not evaluated (not an adequate reason to fail a testing event) the terms seem to be used interchangeably throughout the document.

The notion that the evaluation of CRM skills is "inherently subjective" (page 62) may interfere with the evaluation of proceduralized CRM skills (briefings, radio calls, et.), which may be much more amenable to evaluation than other CRM skills. Studies sponsored by the FAA in the 1990s demonstrated that, given the appropriate level of investment, CRM evaluations may no less reliable than technical evaluations.



16. Non-technical skills assessment (NOTECHS) for flight crew.

While US carriers have not necessarily embraced NOTECHS per se, they have embraced very similar systems, with behavioral markers for each CRM behavior.

response

Partially accepted.

**On No 1:** Noted. It is the responsibility of the competent authority to ensure that the inspectors are trained according to AMC3 ARO.GEN(a)(2). This includes the case of competency-based systems. It might be that the competent authority and the operator agree that the inspector attends for example an initial CRM training offered by the operator.

**On No 2:** Not accepted. The Agency, after discussion with the Review Group, decided to keep the term 'checklist'.

**On No 3:** Noted. Having in mind future developments, the concept and/or the terminology might then need to be amended.

**On No 4:** Noted. The Agency decided not to highlight the joint planning of non-combined CRM training.

**On No 6:** Noted. The information provided is appreciated.

**On No 8:** Noted. The general support of the FAA is appreciated.

**On No 9:** Noted. The general support of the FAA is appreciated.

**On No 10:** Noted. The general support of the FAA is appreciated.

**On No 11:** Noted. The general support of the FAA is appreciated.

**On No 15:** Noted. The information provided is appreciated.

**On No 16:** Noted. The information provided is appreciated.

comment

231

comment by: ECOGAS/SVFB/SAMA

**(EHFAG)**

We are aware of the competence of this group. However we suspect vested interest of "independent" members: it's natural they want to market their competence as widely as possible.

Furthermore there was no representation of SME's in WG RMT.0411.

We have been offered participation however, its beyond the possibilities of SME Organisations to participate.

For many reasons we have no individual memberslie EAS EGU which by this principle have considerable resources. This is not possible within our structure.

Missing participation has led to rules not proportionate to Small and Medium Enterprises and not proportionate to potential risks.

**Technical Crew:** as long as it's unambiguously limited to Crew within the Crew on Board we will not object.



If it should mean technical crews, we have given the reasons for heavy objection in 230 above.

**Agencies Rulemaking Group:** This GC shows that there was no single representable for SME'. We do not reproach this to EASA: SME's are unable to participate in WG's due to lack of resources (time, money and staff). However the Objectives of the ToR and the NPA are not consistent as Maintenance, which was never mentioned in the ToR has become part of the NPA. This is unacceptable

response

Noted.

The Agency invited all interested parties to bring in their expertise in the Agency's Rulemaking Group in order to establish the provisions on a common ground. Unfortunately, as mentioned by the commentator, SMEs did not attend the Rulemaking Group meetings. However, the Agency addressed several SMEs during the process asking them to provide their initial comments. The Agency is also thankful for the comments provided by SMEs during the public consultation of the NPA.

'Technical crew member' is defined in Annex I (Definitions) of Regulation (EU) No 965/2012 as follows: "Technical crew member' means a crew member in commercial air transport HEMS, HHO or NVIS operations other than a flight or cabin crew member, assigned by the operator to duties in the aircraft or on the ground for the purpose of assisting the pilot during HEMS, HHO or NVIS operations, which may require the operation of specialised on-board equipment."

As one can see, this definition is restricted to certain helicopter operations and does not include, for instance, maintenance personnel.

comment

232

comment by: ECOGAS/SVFB/SAMA

### The Agencies Obligation to address safety recommendations

None of the 7 cited safety recommendation mentions lack of CRM within maintenance as a causal factor.

We fully support usefulness for FLIGHT CREW and would not object **major (maintenance) organizations** if in their argumentation they would find CRM is enhancing safety within major organisations.

But volume and complexity of regulations AMC ad GM issued in the last few years has raised to a level which surpasses the cognitive ability of human beings, which may be of concern even within major organisations and at the end may have a negative effect on safety at the end.

response

Noted.

Concerning maintenance, there might be a misunderstanding: The provisions on CRM training do not include maintenance.



comment	233	comment by: ECOGAS/SVFB/SAMA
	<p><b>Items which were incorporated</b></p> <p>There is no mention here to include maintenance in general and especially no mention to include SME's into the CRM concept.</p>	
response	<p>Noted.</p> <p>Concerning maintenance, there might be a misunderstanding: The provisions on CRM training do not include maintenance.</p>	

comment	287	comment by: IATA (Dragos Munteanu)
	<p>EASA needs to have a more robust process to review accident investigation recommendations as a basis for decision whether or not to implement those recommendations (rather than implementation of each of those recommendations).</p>	
response	<p>Noted.</p> <p>The Agency's process for reviewing accident investigation recommendations is not part of the present rulemaking task.</p>	

## 2. Explanatory Note - 2.2. Objectives

p. 11

comment	30	comment by: ATF - Awareness Training Fakoussa
	<p>"to establish and maintain a high uniform level of safety in air operations" requires a different approach for every individual. Computers and excel spreadsheets work on a digital basis and can be rationally understood. Human beings are not digital systems but analogous working systems, which in addition have a fuzzy logic, which is examined by psychology. So to achieve a uniform level requires a non uniform approach. This is different from the typical approach to believe that rules and regulations being uniform for all operators "MAKE" uniformity. The different operators have completely different cultures, meaning completely different interpretation of the uniform rules and regulations.</p> <p>To establish a higher level of safety requires in addition to PRM/CRM courses for the crew, that management (from post holders to directors to CEOs) also attend the PRM/CRM course. We cannot expect higher safety without going higher in hierarchy. In many companies the crews are treated by management unintendedly/unconsciously and/or with intention, opposite to PRM/CRM principles. On paper everything is standardized and when audited people behave accordingly. But the reality of daily operation shows a different picture. No</p>	



blame culture is not achieved through paperwork and not through the CEOs assurance to implement and have it. It is a question of emotional trust between management and crews. To achieve that trust requires open communication processes bottom up and top down. This can be achieved by practical exercises of communicative openness during the PRM/CRM courses with both parties being present, management and crews.

response

Noted.

The Agency agrees in general with the opinion presented by the commentator. However, it is outside the scope of the present rulemaking task to include a provision for the senior management to attend CRM trainings. On the other hand, the Agency introduced in Table 1 of GM3 ORO.FC.115 of the NPA the following provisions: 'Ensure the organisation is ready for CRM training' and 'Establish an environment where CRM training is positively recognised'. A precondition for both provisions is a positive attitude of the senior management towards CRM training.

## 2. Explanatory Note - 2.3. Summary of the Regulatory Impact Assessment (RIA)

p. 11-12

comment

31

comment by: *ATF - Awareness Training Fakoussa*

Option 1 is definitely the best way to achieve a higher level of safety by giving the operator the chance to develop the necessary tools himself. Only by giving some freedom to the individual organizations the best way can be found. Everything else is overregulated and leaves no room for the development of a positive safety culture. Operators that don't understand the CRM/PRM approach will not be forced by any rules to develop anything. But they could be motivated through other operators approach to rethink the importance of good PRM/CRM courses. It would be helpful to ask the management to be part of the PRM/CRM courses. That would certainly have the greatest impact on achieving more safety.

response

Not accepted.

For the Agency, Option 2 is the preferred one, as explained in the Regulatory Impact Assessment.

comment

290

comment by: *Air Berlin*

The Option 2 would be beneficial.

An amendment of the present documentation will help operators achieve a better standard and same understanding of the contents to be trained and methods of delivery of the training.



response Noted.  
The support of Air Berlin is appreciated.

## 2. Explanatory Note - 2.4. Overview of the proposed amendments

p. 12-19

comment 6 comment by: *Stefano Cignoni*  
My personal opinion is that there is no need to do that anymore.

response Noted.

comment 7 comment by: *Brian Davison CRM Clarified*  
"Oversight by the Competent Authority " - this sadly seems the only reference to the controlling Authority, be it CAA, FOCA etc.  
Leaving so much to the Operator, leaves the door wide open for falling standards, especially during times of financial restrictions ( almost continually in the case of Airline operators. ) Before JAR, the Authority decided whether CRMIEs were up to standard, whereas now it seems the Operator can pass who they wish ( 'cos he's a nice bloke etc ). The loose and politically correct wording is nowhere near strict enough to maintain safety standards.  
Living and working in Switzerland, and having once been a member of the CRM steering group, I find it tragic that FOCA now have " washed their hands" of any control of standards in the area of CRM.  
This subject continually gains credibility through accident analysis and even more with its applicability to health care where the changing statistics demonstrate clearly its importance both economically as well as safety wise.  
Capt Brian Davison FRAeS - CRMIE.

response Noted.  
The Agency is of the opinion that the provisions concerning oversight are a good compromise between 'do nothing' and 'overregulating'.

comment 19 comment by: *Federal Office of Civil Aviation FOCA*  
p. 14 (Question: Should a statement such as the following be included in the concerning



response	<p>assessment of CRM skills?); Yes. In order to involve the crews adequately and to improve acceptance of a CRM skill assessment system FOCA is clearly in favor of such a statement.</p> <p>Noted.</p> <p>Please refer to the discussion on ‘Assessment — agreement with flight crew representatives’ in Chapter 2 of this CRD.</p>
comment	<p>27 <span style="float: right;">comment by: <i>David Ryan</i></span></p> <p>Question on page 15: No. The use of the phrase “where possible” serves only to suggest a best practice rather than make any obligation, and will not have any effect on organisations that do not have flight crew representation.</p>
response	<p>Noted.</p> <p>As the commentator correctly pointed out, flight crew representatives can only be involved when such representatives exist within the organisation.</p>
comment	<p>32 <span style="float: right;">comment by: <i>ATF - Awareness Training Fakoussa</i></span></p> <p>“a checklist for CRM training oversight“ will be used by those people that do not or cannot understand the required individual and group oriented approach in CRM/PRM courses to achieve an equal standard of safety. It would be better to familiarize the “checker” of the NAA with the sense of group dynamic instructing which can be understood by recognizing the meaningful sense of the flexible course contents.</p> <p>A checklist does not distinguish between meaningful and useless course contents in non technical skills and abilities.</p> <p>Concerning "Flight crew — operator conversion course, recurrent CRM training and command course": as well as any other course that requires CRM assessment the main problem is the very limited training of assessors. It is usually done on the basis of CRM “checklists” and not according to human being needs and situational individual requirements of the assessed person. If EASA asks for assessment it should make sure, that the training of the assessors is appropriate in the first place.</p> <p>‘In order to enhance the effectiveness of the programme, the assessment methodology should, where possible, be discussed <del>agreed</del> with CRM knowledgeable and competent flight crew representatives’. Union members and representatives of associations are not necessarily experts in human factors and PRM/CRM training subjects.</p> <p>Union members and representatives of associations are not necessarily experts in human factors and PRM/CRM training subjects and certainly not in its assessment.</p> <p>They understand their position as protecting their members against incompetent assessors, which is acceptable with that little cognitive training given to already nominated and future</p>



assessors.

Flight crew — single-pilot operations: As said before CBT cannot change a person's individual behavior or even attitude. Especially in single pilot operation the practical ability of self-control in unexpected situations is the key to improved safety. As stand alone completely useless, but cheap.

Concerning an instructor does not have to fulfil additional training requirements to become a CRM (classroom) trainer (see (c)(5) of AMC3 ORO.FC.115).

This is just money saving but not safety improving. Fit into the flight instructor basic course a day of CRM/PRM and thus the future classroom CRM trainer has at least a theoretical clue, what his job is. But any **other-than complex motor-powered aircraft** can bring a jumbo down. So if EASA wishes to have the SKY safer, EASA is required to have the same PRM/CRM level of self control of pilots in any operation, regardless of its propulsion.

Flight crew — CRM trainer vs CRM instructor: in both cases we have instructors. If the training took place in a simulator with practical CRM exercises they would both be CRM trainers. See also Flight Instructor and Type Rating Instructor! They too don't train, but instruct (mainly).

Cabin crew, single or multi, require a much more practical approach and certainly not just CBT training. Arguments mentioned before already.

Cabin crew – training elements are defined according to accidents and incidents already. We don't need more elements but more effective ways of bringing those elements over to the participants. And this "HOW" is part of PRM/CRM instructors basic training. If that basic training of future CRM trainers does not include personal experience and recognition and acceptance and change of one's own personality the trainer/instructor will not convince any participant.

#### 34. Cabin crew — resilience development

As the term resilience engineering says already. It is derived from the technical world and is just a different word for staying self-controlled. As the cabin is mainly female a technical derived term is not an acceptable cognitive model or theory for female training. The term resilience was introduced into aviation from engineering out of the helplessness not to be able to reduce the human error any more. Instead of changing the useless and ineffective tools and trainers we change the words and the elements. That will not work either as resilience is just a cognitive term. Its usage does not MAKE an individual self-controlled!

response

Not accepted.

For various items the commentator provides a position which is different from the opinion of the Agency. Since the Agency presented its position in depth in the NPA, it has been decided not to repeat it here. However, some of the items (e.g. computer-based training and resilience development) are discussed in Chapter 2 of this CRD.

comment

37

comment by: UK CAA

**Page No: 17**



**Paragraph No:** 25 - Cabin Crew – operator’s CRM training, operator aircraft type conversion training, annual recurrent CRM training and senior cabin crew member course:

**Comment:** Clarification is required that the minimum training hours for the operator’s (initial) CRM training, as prescribed by the Agency, is accurately documented to mean operator’s CRM training.

**Justification:** The reference to ‘initial’ may be misunderstood to mean initial training as prescribed in (EU) No 1178/2011 - Appendix 1 to Part CC.

**Proposed Text:** “Following the proposal of the Rule Making Group, the Agency decided to prescribe minimum training hours for the operator’s ~~(initial)~~ CRM training ~~only~~.”

response

Noted.

The Agency appreciates that the commentator points out an issue that may lead to a misunderstanding. Unfortunately, the Explanatory Note of the NPA will not be amended and republished. However, the associated provisions laid down in paragraph (b) of ANC1 ORO.CC.115(e) on ‘Operator’s CRM training’ should clarify the issue.

comment

39

comment by: *Ryanair*

In response to section **8. Flight Crew - Assessment of CRM skills**.

**Answer = NO** - An ATO or Airline /Operator management must be able to decide on the content and conduct of its CRM training solely on the basis of professional evaluation of training requirements based on evidenced based training and close interaction with the operator's SMS. Instructor/Examiner/Student feedback devices (Instructor/Examiner conferences, student course critique, etc.) are adequate means of gathering information on which to base revisions to the course or assessment methodology as appropriate. The practice of SMS Just Culture provides effective interaction between Crew and Operator. There is no justification for this text to be included within a technical rule.

response

Noted.

Please refer to the discussion in Chapter 2 of this CRD.

comment

71

comment by: *Boeing*

Page: 14

Paragraph: 8. Flight crew — assessment of CRM skills:

**The proposed text states:**

**“Question:** *Should a statement such as the following be included in the provisions concerning assessment of CRM skills?*

*‘In order to enhance the effectiveness of the programme, the assessment methodology*



should, where possible, be agreed with flight crew representatives.’

a) Yes

b) No”

Our response to this question is: “b) No”

**JUSTIFICATION:** We agree with EASA’s intention to delete the statement concerning flight crew representatives’ participation. The “just culture” required in today’s aviation organizations and aircraft operators [via Safety Management Systems (SMS)] requires open and unrestricted communication, especially on safety issues.

response

Noted.

Please refer to the discussion in Chapter 2 of this CRD.

comment

75

comment by: FAA

Page 12. In the US, CRM training for all non-pilot personnel rests primarily on the basis of principles generated through research on pilots. The ground portion of CRM is consequently nearly identical for all groups.

response

Noted.

The Agency appreciates the information provided.

comment

76

comment by: FAA

Page 13. Evaluation is used when assessment may be the more accurate term.

response

Noted.

The Agency used the term ‘evaluation’ since the term ‘assessment’ is used in a specific manner in the provisions (‘assessment of CRM skills’).

comment

77

comment by: FAA

Pages 17-18. Page 17 indicates that CRM will not be assessed but the checklist is for designing, delivering and “evaluating” CRM. Would “assessing” be the better word?

response

Noted.

The Agency used the term ‘evaluation’ since the term ‘assessment’ is used in a specific



manner in the provisions ('assessment of CRM skills').

comment

comment by:

88 A.L.P.L. - Association Luxembourgeoise des Pilotes de Ligne a.s.b.l.  
 128 Nuno Queiroz  
 157 European Cockpit Association  
 206 Vereinigung Cockpit e.V.  
 343 SNPL FRANCE ALPA  
 402 Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria

#### Air operations — Part-ARO; Oversight by the competent authority: (page 12 of 79)

Paragraph starting with:

*"One major concern expressed during the establishment of this NPA was that at present for the majority of Member States the oversight is not always effective. According to the input received, such an oversight is an important prerequisite for ensuring effective and high-quality CRM training. (...)"*<sup>52</sup>

#### 1. Oversight by the competent authority<sup>53</sup>

(As a works council)<sup>54</sup> We believe this is a valid and definite improvement for the oversight capacities of the National Authorities.

The competent authorities will have to implement the checklist for CRM training oversight by introducing GM3 ARO.GEN.300 (a);(b);(c). In order to achieve this, the competent authorities will have to qualify and train their personnel according to AMC ARO. GEN. 200(a)(2), related to the competent authority's management system.

We believe that ARO.GEN.300 regulatory framework is considered to be thorough and still valid.

response

Noted.

The Agency appreciates the support expressed in the comment.

comment

comment by:

89 A.L.P.L. - Association Luxembourgeoise des Pilotes de Ligne a.s.b.l.  
 129 Nuno Queiroz

<sup>52</sup> The text above was only included in the comments from European Cockpit Association, Vereinigung Cockpit e.V. and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.

<sup>53</sup> This title was only included in the comments from A.L.P.L. Association Luxembourgeoise des Pilotes de Ligne and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.

<sup>54</sup> The text in the brackets was only included in the comment from Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.



158	European Cockpit Association
207	Vereinigung Cockpit e.V.
344	SNPL FRANCE ALPA
403	Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria
<b>Air operations — Part-ARO; Flight crew — applicability: (page 12 of 79)</b>	
Paragraph starting with:	
<i>“The existing provisions are only applicable to commercial air transport (CAT) operations. With the proposed amendments, the applicability will be expanded to include all operations where Part-ORO applies to (see ORO.GEN.005 of Commission Regulation (EU) No 965/2012). The Agency decided, based on the input received, to distinguish between multi-pilot operations (see AMC1 ORO.FC.115) and single-pilot operations (see AMC2 ORO.FC.115).”<sup>55</sup></i>	
<b>2. Flight crew — applicability<sup>56</sup></b>	
We believe these are positive improvements. The new provisions are extended not just to CAT (Commercial Air Transport) operations but to all pilots included in Part ORO (ORO.GEN.005), although EASA will continue to distinguish between single and multi pilot ops.	
response	Noted. The Agency appreciates the support expressed in the comment.

comment

	comment by:
90	A.L.P.L. - Association Luxembourgeoise des Pilotes de Ligne a.s.b.l.
130	Nuno Queiroz
159	European Cockpit Association
208	Vereinigung Cockpit e.V.
345	SNPL FRANCE ALPA
<b>Air operations — Part-ARO; Flight crew — general items concerning CRM training (page 13 of 79)</b>	
Paragraph starting with:	
<i>The structure of the existing paragraph (a) of AMC1 ORO.FC.115, entitled ‘General’, only contains a few general items. In the present applicable framework other important items, which can also be considered as being ‘general’, are hidden further down in the AMC text. In</i>	

<sup>55</sup> The text above was only included in the comments from European Cockpit Association, Vereinigung Cockpit e.V. and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.

<sup>56</sup> This title was only included in the comments from A.L.P.L. Association Luxembourgeoise des Pilotes de Ligne and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.



*addition, based on the input received, the Agency considered it necessary to introduce further new general items.<sup>57</sup>*

### **3. Flight crew — general items concerning CRM training<sup>58</sup>**

We welcome the “update”, with an important remark about computer based training. Moreover, we welcome the fact that new, “state of the art” items are introduced, such as “competency based training” or “management system”.

response

Noted.

The Agency appreciates the support expressed in the comment. Concerning computer-based training, please refer to the discussion in Chapter 2 of this CRD.

comment

comment by:

91	<i>A.L.P.L. - Association Luxembourgeoise des Pilotes de Ligne a.s.b.l.</i>
131	<i>Nuno Queiroz</i>
160	<i>European Cockpit Association</i>
209	<i>Vereinigung Cockpit e.V.</i>
346	<i>SNPL FRANCE ALPA</i>
404	<i>Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria</i>

### **Air operations — Part-ARO; Flight crew - initial operator’s training (page 13 of 79)**

Paragraph starting with:

*In order to improve the readability and the structure the Agency proposes to delete from the new paragraph (b) of AMC1 ORO.FC.115 the previous provisions on ‘CRM trainer’ (see existing paragraph (b) of AMC1 ORO.FC.115&215), and to transfer these provisions to AMC3 ORO.FC.115, entitled ‘Flight crew CRM trainer and flight crew CRM trainer examiner’. In addition, based on the Rulemaking Group’s proposal, the Agency introduced minimum training hours for initial operator’s training.<sup>59</sup>*

### **4. Flight crew - initial operator’s training<sup>60</sup>**

The requisites for the CRM trainer are transferred from this paragraph to the AMC3.ORO.FC.115&215. We believe that is a positive, logical change.

Moreover, we acknowledge that a minimum number of training hours is introduced: 24, of which at least 18 are to be conducted in the classroom.

<sup>57</sup> The text above was only included in the comments from European Cockpit Association, Vereinigung Cockpit e.V. and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.

<sup>58</sup> This title was only included in the comments from A.L.P.L. Association Luxembourgeoise des Pilotes de Ligne and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.

<sup>59</sup> The text above was only included in the comments from European Cockpit Association, Vereinigung Cockpit e.V. and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.

<sup>60</sup> This title was only included in the comments from A.L.P.L. Association Luxembourgeoise des Pilotes de Ligne and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.



While no time frame is established for recurrent training, we would like to remind that the requirement for combined training every 3 years, covering at least 8 hours, is a significant improvement.

We acknowledge that this is a major recognition of the importance of the knowledge of CRM in the initial course and with combined, recurrent training. However, **we are concerned that no minimum timeframe for command course has been established**, which could make oversight by the authorities more difficult and might open a back door for less than scrupulous operators. We therefore suggest adding a requirement for 24 hours, of which at least 16 are classroom training.

response

Noted.

The Agency appreciates the support expressed in the comment. Concerning minimum training times, please refer to the discussion in Chapter 2 of this CRD.

comment

comment by:

92	A.L.P.L. - Association Luxembourgeoise des Pilotes de Ligne a.s.b.l.
132	Nuno Queiroz
161	European Cockpit Association
210	Vereinigung Cockpit e.V.
348	SNPL FRANCE ALPA
405	Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria

**Air operations — Part-ARO; Flight crew — operator conversion course, recurrent CRM training and command course (page 13 of 79)**

Paragraph starting with:

*For these paragraphs (c), (d) and (e) of AMC1 ORO.FC.115 the Agency proposes, apart from editorial changes, the following amendments:*

— *The order of the paragraphs has been changed to be in line with the order of the columns in Table 1 of AMC1 ORO.FC.115, and to be in line with the order of the cabin crew AMC.*

— *Based on the input received, the Agency concluded that an assessment of CRM skills is appropriate. Therefore, the statement not to assess flight crew has been deleted. The definition of assessment of CRM skills ('Assessment of CRM skills is the process of observing, recording, interpreting and debriefing crews and crew member's performance ...') and further details on the process are laid down in paragraph (h) of AMC1 ORO.FC.115.<sup>61</sup>*

**5. Flight crew — operator conversion course, recurrent CRM training and command course<sup>62</sup>**

<sup>61</sup> The text above was only included in the comments from European Cockpit Association, Vereinigung Cockpit e.V. and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.

<sup>62</sup> This title was only included in the comments from A.L.P.L. Association Luxembourgeoise des Pilotes de Ligne and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.



According to our assessment, besides the changes in the structure, **some of the proposed changes are highly problematic and must be reconsidered:**

**Assessment of CRM skills,**

the paragraph: *“The assessment of CRM should not include any testing or checking of the flight crew or flight crew member’s CRM performance...”* has been deleted and therefore crews are to be assessed in pure CRM skills.

CRM training is not an easy subject. It is hard to quantify, there is often some confusion on definitions and meanings and not at the least, it is prone to subjective assessments.

It is obviously difficult for anyone to accept an evaluation which is subjective, rather than based on clearly defined criteria, concepts and terms. So the highest care must be taken that this does not happen when the license of a pilot is at stake during a check ride.

This is not to say that there cannot be improvements flagged up to a pilot as regard to CRM, but **CRM assessments – which will always contain subjective elements – should not be check-relevant**, i.e. not lead to a failure during a check ride. This was an **essential element built into the current system and must be maintained.**

**Significant reduction in safety margins:**

The paragraph: *“assessments should include behaviour that contributes to a significant reduction in safety margins.”* has replaced the previous *“assessments should include behaviour that contributes to a technical failure, such technical failure being errors leading to an event that requires debriefing by the person conducting the line check”*.

The current system based on the latter wording has worked and continues to work properly. Therefore **there is no need to change it.** ‘If not broken, don’t fix it’.

If however the wording is changed, it would have **negative consequences:** The proposal *“assessments should include behaviour that contributes to a significant reduction in safety margins”* **detaches the CRM assessment from a clearly understood concept – a ‘technical failure’; It replaces ‘technical failure’ with a very subjective “reduction in safety margins”.**

This *“reduction in safety margins”* is undefined and wide open for interpretation. Therefore, **the newly proposed text makes the CRM evaluation very subjective and hence difficult to implement, to apply uniformly and without opening to door to contested interpretations and potential abuse.**

Also, at the present time there is no guarantee that the evaluators are properly trained and that there is a standardized method of assessing those skills, introducing subjective elements will therefore make the challenge bigger rather than smaller by relying on a term (technical failure) that is clearly understood throughout the industry.

This subject has been addressed previously by the European Cockpit Association in a letter addressed to the EASA (November 2013).

response

Noted.

Please refer to the discussion on assessment in Chapter 2 of this CRD. Concerning the following statement, there must be a misunderstanding: ‘The assessment of CRM should not include any testing or checking of the flight crew or flight crew member’s CRM performance.’ Such a statement does not exist in the AMC/GM applicable at present and, therefore, has not been deleted.



comment

comment by:

93	A.L.P.L. - Association Luxembourgeoise des Pilotes de Ligne a.s.b.l.
133	Nuno Queiroz
162	European Cockpit Association
211	Vereinigung Cockpit e.V.
349	SNPL FRANCE ALPA
406	Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria

### Air operations — Part-ARO; Flight crew — training elements (page 13 of 79)

Paragraph starting with:

*In order to improve the readability and the structure of the AMC, the Agency proposes to add a new paragraph (f) to AMC1 ORO.FC.115, entitled ‘Training elements’.*

*This paragraph includes explanations, if needed, for training elements which are mostly listed in Table 1 of AMC1 ORO.FC.115 below.*

*In addition to the already existing training elements the Agency proposes to incorporate new elements such as ‘monitoring and intervention’, ‘resilience development’ and ‘surprise and startle effect’ into this paragraph.<sup>63</sup>*

#### 6. Flight crew — training elements<sup>64</sup>

While we acknowledge that incorporation of ‘resilience development and surprise and startle effect’ is an interesting update, we believe that further work needs to be done in implementing the effective training of these newly described skills.

Furthermore, we acknowledge that the concept was incorporated mainly as a consequence of the recommendations from the investigators of the air crashes mentioned at the introduction.

response

Noted.

Please refer to the discussion on resilience development and on the surprise and startle effect in Chapter 2 of this CRD.

comment

comment by:

94	A.L.P.L. - Association Luxembourgeoise des Pilotes de Ligne a.s.b.l.
134	Nuno Queiroz

<sup>63</sup> The text above was only included in the comments from European Cockpit Association, Vereinigung Cockpit e.V. and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.

<sup>64</sup> This title was only included in the comments from A.L.P.L. Association Luxembourgeoise des Pilotes de Ligne and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.



163	European Cockpit Association
212	Vereinigung Cockpit e.V.
350	SNPL FRANCE ALPA
407	Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria

### Air operations — Part-ARO; Flight crew — assessment of CRM skills (page 14 of 79)

Paragraph starting with:

*Based on the input received, the Agency proposes some changes to paragraph (h) of AMC1 ORO.FC.115 to increase the clarity and readability. In this context, it is proposed that flight crew should be assessed during training in the operational environment, but not during training in the non-operational environment (e.g. during classroom training). The present applicable framework contains a statement that the assessment ‘...methodology, should, where possible, be agreed with flight crew representatives’. The Agency’s Rulemaking Group discussed in depth whether this statement should be kept or deleted. Some members emphasised that the involvement of flight crew representatives was a key requirement when CRM was introduced; and since this requirement has shown its benefit, it should remain. On the contrary, other members pointed out that this statement might have been appropriate in the early years of CRM training, but nowadays it is in substance of no use within a technical rule. This especially holds for a ‘just culture’ environment with an open form of communication and participation. Instead, State laws regulate agreements between company owners and employee representatives. The Agency, based on the input received, decided to propose deleting the statement concerning flight crew representatives’ participation. Nevertheless, the Agency would like to ask the following question to commentators of this NPA: Question: Should a statement such as the following be included in the provisions concerning assessment of CRM skills?*

**‘In order to enhance the effectiveness of the programme, the assessment methodology should, where possible, be agreed with flight crew representatives’.**

**a) Yes**

**b) No**<sup>65</sup>

### **8. Flight crew — assessment of CRM skills**<sup>66</sup>

The proposal to exclude Flight Crew Representatives, i.e., Pilots, from the process of developing an effective method of assessment of CRM skills is a major step backwards in the concepts of Safety and Just Cultures, especially combined with the requirement to assess pilots in CRM skills regardless of the outcome of the operation.

The combination of a subjective assessment (based on an undefined term of ‘reduction of safety margins’ which is open to subjective interpretations) and the exclusion of pilots from the whole process in which the methodology is developed is in our view the worst proposal of this NPA.

**We therefore strongly recommend that the following question be answered positively (YES):**

<sup>65</sup> The text above was only included in the comments from European Cockpit Association, Vereinigung Cockpit e.V. and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.

<sup>66</sup> This title was only included in the comments from A.L.P.L. Association Luxembourgeoise des Pilotes de Ligne and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.



***Should a statement such as the following be included in the provisions concerning assessment of CRM skills? “In order to enhance the effectiveness of the programme, the assessment methodology should, where possible, be agreed with flight crew representatives.” Answer: a) YES***

The statement “methodology, should, where possible, be agreed with flight crew representatives” was a key requirement when CRM was introduced.

All stakeholders were very much aware that a successful CRM introduction would only be possible if there was enough trust in the system. In order to guarantee that trust the requirement to involve flight crew representatives had been included on purpose. This requirement has shown its benefit since.

There are some who argue that CRM is now well established and thus such a requirement might no longer be necessary. Although there are indeed airlines where CRM is nowadays uncontested, this regrettably is not the case everywhere. Even in well established companies, the safety culture and Just Culture environment are not always as developed as they should be. In such an environment, this provisions remains key to ensure CRM is widely accepted, is seen as a safety tool and is not abused to ‘get rid of the rotten apples’. This provision is still very necessary to build and keep the trust in the CRM system.

Also, new start-ups that cannot bank on a long-built trust and an established mature safety culture within the company. They will have to go through the process from scratch and the provision will therefore be necessary.

Furthermore, we do not see a contradiction with the fact that “State laws regulate agreements between company owners and employee representatives”. The requirement to include flight crew representatives in the process of developing an effective method of assessment of CRM skills, is not an industrial issue but a technical one, which is necessary to ensure CRM is understood and used as a safety tool and benefits from the trust of all involved.

Finally, in companies where the current system of consulting flight crew representatives works well and has shown its benefits, the retention of the current text will not entail any disadvantages (while the deletion might well have negative consequences over time). In companies where the system does not work properly, or in newly set-up companies, the retention of this wording will make a significant positive difference.

For these reasons **we strongly recommend to leave this essential requirement in the text**. If we pull out the guarantee that ensures trust, we risk damaging all the benefits that CRM brings to the aviation safety system.

response

Noted.

Please refer to the discussion in Chapter 2 of this CRD.

comment

comment by:

95

*A.L.P.L. - Association Luxembourgeoise des Pilotes de Ligne a.s.b.l.*

135

*Nuno Queiroz*

164

*European Cockpit Association*

213	Vereinigung Cockpit e.V.
351	SNPL FRANCE ALPA
408	Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria
<b>Air operations — Part-ARO; Flight crew — single-pilot operations (page 14 of 79)</b>	
Paragraph starting with:	
<i>For CRM training of single-pilot operations, the differences towards multi-pilot CRM training are highlighted in AMC2 ORO.FC.115. This includes computer-based training, which is proposed to be accepted as a stand-alone training method for single-pilot operations.<sup>67</sup></i>	
<b>9. Flight crew — single-pilot operations<sup>68</sup></b>	
Computer based training may be used as a stand-alone method when it comes to CRM training for single pilot operations.	
We welcome the fact that EASA is aware of the need to train CRM even for single Pilot operations, with emphasis on SA, decision making, workload mgmt. and effective communications with other operational personnel It is an important and positive point.	
response	Noted.  The Agency appreciates the support expressed in the comment. Concerning computer-based training, please refer to the discussion in Chapter 2 of this CRD.

comment

	comment by:
96	A.L.P.L. - Association Luxembourgeoise des Pilotes de Ligne a.s.b.l.
136	Nuno Queiroz
165	European Cockpit Association
214	Vereinigung Cockpit e.V.
352	SNPL FRANCE ALPA
409	Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria
<b>Air operations — Part-ARO; Flight crew/CRM trainer – other-than complex motor-powered aircraft (page 14 of 79)</b>	
Paragraph starting with:	
<i>The provisions in Part-ORO are applicable also to CAT operations and commercial specialised operations of other-than complex motor-powered aircraft (i.e. Small propeller-driven aeroplanes, sailplanes and balloons). To ensure that the provisions are proportionate to the</i>	

<sup>67</sup> The text above was only included in the comments from European Cockpit Association, Vereinigung Cockpit e.V. and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.

<sup>68</sup> This title was only included in the comments from A.L.P.L. Association Luxembourgeoise des Pilotes de Ligne and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.



risks of operations with this aircraft category, the Agency proposes (...) measures to simplify.<sup>69</sup>

#### 10. Flight crew/CRM trainer – other-than complex motor-powered aircraft<sup>70</sup>

The Agency proposes that in CAT operations and commercial specialised operations of other-than complex motor-powered aircraft the Operator itself should determine the minimum number of CRM training hours for initial training (AMC2 ORO.FC.115 (b)(2)(ii))

Leaving the training requirements entirely up to the Operator is contrary to the philosophy of having certain minimum to be respected and allowing the national authorities (and EASA) to effectively oversee such a requirement. At least, a minimum number of CRM training hours should be specified, then to be expanded if necessary by the Operator.

response

Not accepted.

Please refer to the discussion on minimum training times in Chapter 2 of this CRD.

comment

comment by:

97	A.L.P.L. - Association Luxembourgeoise des Pilotes de Ligne a.s.b.l.
137	Nuno Queiroz
166	European Cockpit Association
215	Vereinigung Cockpit e.V.
353	SNPL FRANCE ALPA
410	Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria

#### Air operations — Part-ARO; Flight crew — CRM trainer vs CRM instructor (page 15 of 79)

Paragraph starting with:

*In the present applicable framework for flight crew the term ‘CRM trainer’ is used. This is in contrast to the framework to be applied at present for cabin crew, where the Agency utilises the term ‘CRM instructor’. For consistency reasons, the Agency proposes to use the term ‘CRM trainer’ for both flight crew and cabin crew.<sup>71</sup>*

#### 11. Flight crew — CRM trainer vs CRM instructor<sup>72</sup>

EASA proposes a change in order to standardize phraseology.

Such a standardisation is welcome. However, while ‘CRM trainer’ may be an acceptable term, the term ‘instructor’, as used by UK CAA is preferable. ‘Instructor’ conveys a sense of

<sup>69</sup> The text above was only included in the comments from European Cockpit Association, Vereinigung Cockpit e.V. and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.

<sup>70</sup> This title was only included in the comments from A.L.P.L. Association Luxembourgeoise des Pilotes de Ligne and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.

<sup>71</sup> The text above was only included in the comments from European Cockpit Association, Vereinigung Cockpit e.V. and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.

<sup>72</sup> This title was only included in the comments from A.L.P.L. Association Luxembourgeoise des Pilotes de Ligne and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.



	standardization, professionalism, minimum requisites and certification. – If ‘instructor’ is used, several other provisions (where ‘trainer’ is used) need to be adapted.
response	<p>Not accepted.</p> <p>This issue was discussed in depth during the drafting of the NPA. Using the term ‘CRM instructor’ would immediately lead to confusion related to an instructor holding a certificate in accordance with Regulation (EU) No 1178/2011. In order to avoid any misunderstanding, the Agency decided to distinguish between a CRM trainer, responsible for classroom training, and an instructor, described above, conducting CRM training in the operational environment.</p>

comment	comment by:
98	A.L.P.L. - Association Luxembourgeoise des Pilotes de Ligne a.s.b.l.
138	Nuno Queiroz
167	European Cockpit Association
216	Vereinigung Cockpit e.V.
354	SNPL FRANCE ALPA
411	Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria
<p><b>Air operations — Part-ARO; Flight crew — CRM trainer/ examiner (page 15 of 79)</b></p> <p>Paragraph starting with:</p> <p><i>One major request received during the establishment of the NPA was to improve the requirements for CRM trainers and to introduce requirements for CRM trainer examiners. Following this request, the Agency proposes the following:</i></p> <ul style="list-style-type: none"> <li>— <i>In order to improve the overall readability and structure, a separate AMC3 ORO.FC.115, entitled ‘Flight crew CRM trainer and flight crew CRM trainer examiner’, is introduced.</i></li> <li>— <i>Existing provisions concerning the ‘qualification of flight crew CRM trainer’ are updated and transferred to AMC3 ORO.FC.115.</i></li> <li>— <i>Provisions are introduced concerning training, assessment, recency and renewal of the status of the CRM trainer, as well as provisions concerning the CRM trainer examiner, based on the UK CAA Document No 29.<sup>73</sup></i></li> </ul> <p><b>12. Flight crew — CRM trainer/ examiner<sup>74</sup></b></p> <p>We believe that improving the requirements for CRM trainers and introducing requirements for CRM trainer examiners – is a positive change.</p> <p>Hereby, in AMC.ORO.FC.115, the qualifications and training requirements are set for both CRM Trainers and Examiners.</p>	

<sup>73</sup> The text above was only included in the comments from European Cockpit Association, Vereinigung Cockpit e.V. and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.

<sup>74</sup> This title was only included in the comments from A.L.P.L. Association Luxembourgeoise des Pilotes de Ligne and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.



The major changes are:

- The establishment of a minimum time frame for the training, which includes a course of 40 hours, except in the case of trainees who hold an Instructor certificate, which includes 25 hours of teaching and learning training, and therefore will only need 24 additional hours.

We acknowledge that it is a major improvement as currently there is no time frame requirement and this change is strongly supported.

- The establishment of minimum requirements for the “Train the Trainers” Teacher who must have at least 3 years experience and may be assisted by experts to address specific areas.

- Provisions are introduced concerning training, assessment, recency and renewal of the status of CRM trainer and examiner, in line with UK CAA doc. 29.

- The requirements for CRM training allow pilots or former pilots who stay current in the operations to conduct the training. It makes an exception for “An experienced non-flight crew CRM trainer having adequate knowledge of HPL may become a flight crew CRM trainer if he/she fulfils the provisions of paragraphs (2)(i) and (2)(iii) to (2)(vi)”. This allows for Human Factors Specialists or Aviation Psychologists to carry out the training. However, the wording is a bit too vague, potentially opening a door to insufficiently specialized Trainers. At the very least, national Authorities will have to monitor this approval very carefully (possibly some GM would be required for this).

For consistency with cabin crew CRM trainer requirements set in AMC3 ORO.CC.115(e), the paragraph AMC ORO.FC.115 (b)(1)(i) should be modified as proposed (for further comments see the corresponding CC part)

In summary, overall we consider the changes suggested for the Flight crew CRM trainer and flight crew CRM trainer examiner as positive (subject to the above mentioned suggestions for changes).

response

Noted.

The Agency appreciates the general support expressed in the comment.

comment

comment by:

99	<i>A.L.P.L. - Association Luxembourgeoise des Pilotes de Ligne a.s.b.l.</i>
139	<i>Nuno Queiroz</i>
168	<i>European Cockpit Association</i>
217	<i>Vereinigung Cockpit e.V.</i>
355	<i>SNPL FRANCE ALPA</i>
412	<i>Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria</i>

**Air operations — Part-ARO; Flight crew — resilience development (page 15 of 79)**

Paragraph starting with:

*Based on the input from some members of the Rulemaking Group, the Agency decided to*



*incorporate GM, giving explanation on resilience engineering (see GM4 ORO.FC.115), in order to complement the AMC on this topic (see paragraph (f)(3) of AMC1 ORO.FC.115).<sup>75</sup>*

#### **16. Flight crew — resilience development<sup>76</sup>**

##### **Resilience engineering:**

We believe that while this is an important concept and its explanation much welcome, the manner in which it is to be effectively trained - remains so far unsolved.

Some of us are working on the training methodology and developing ways to adapt this training to the classroom.

Still, resilience and “startle and surprise” concepts define some of the new CRM challenges in classroom training.

response

Noted.

The Agency appreciates the general support expressed in the comment. It should be noted that there is no obligation to train ‘resilience development’ and ‘surprise and startle effect’ in the classroom.

comment

comment by:

100	<i>A.L.P.L. - Association Luxembourgeoise des Pilotes de Ligne a.s.b.l.</i>
140	<i>Nuno Queiroz</i>
169	<i>European Cockpit Association</i>
218	<i>Vereinigung Cockpit e.V.</i>
356	<i>SNPL FRANCE ALPA</i>
413	<i>Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria</i>

#### **Air operations — Part-ARO; Flight crew — CRM trainer assessment (page 16 of 79)**

Flight crew — CRM trainer assessment.<sup>77</sup>

#### **18. Flight crew — CRM trainer assessment<sup>78</sup>**

*During the discussions towards the establishment of this NPA several external experts emphasised the need to further improve the assessment of CRM trainers. The Agency, therefore, decided to propose the incorporation of a checklist for the CRM trainer assessment (see GM6 ORO.FC.115). This checklist is based on a list used by the UK CAA.<sup>79</sup>*

<sup>75</sup> The text above was only included in the comments from European Cockpit Association, Vereinigung Cockpit e.V. and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.

<sup>76</sup> This title was only included in the comments from A.L.P.L. Association Luxembourgeoise des Pilotes de Ligne and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.

<sup>77</sup> The text above was only included in the comments from European Cockpit Association, Vereinigung Cockpit e.V. and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.

<sup>78</sup> This title was only included in the comments from A.L.P.L. Association Luxembourgeoise des Pilotes de Ligne and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.

<sup>79</sup> This paragraph was only included in the comment from Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.



response	<p>The checklist provided, based on the UK CAA, is a positive improvement as a GM.</p> <p>Noted.</p> <p>The Agency appreciates the support expressed in the comment.</p>
comment	<p style="text-align: right;">comment by:</p> <p>101 <i>A.L.P.L. - Association Luxembourgeoise des Pilotes de Ligne a.s.b.l.</i></p> <p>141 <i>Nuno Queiroz</i></p> <p>170 <i>European Cockpit Association</i></p> <p>219 <i>Vereinigung Cockpit e.V.</i></p> <p>357 <i>SNPL FRANCE ALPA</i></p> <p>414 <i>Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria</i></p> <p><b>Flight crew — qualification standards for CRM trainers (page 16 of 79)</b></p> <p>Paragraph starting with:</p> <p><i>Another request made during the establishment of the NPA was to facilitate the possibility for a CRM trainer to work in all Member States. Taking this request into consideration, the Agency proposes to incorporate GM emphasising that the qualification criteria for CRM trainers, as described in the AMC, should be acceptable in all Member States (see GM7 ORO.FC.115).<sup>80</sup></i></p> <p><b>19. Flight crew — qualification standards for CRM trainers<sup>81</sup></b></p> <p>We strongly regret that – even though EASA insists on the standardization of CRM training and Trainers’ qualifications – no license or certificate is provided for a CRM Trainer. This is against the advice of the rule-making Working Group.</p> <p>Thus, while it is expected that the qualification criteria for CRM trainers, as described in the AMC, should be acceptable in all Member States (see GM7 ORO.FC.115), still no certificate or license is established to that effect. Without such a license/certificate the cross-border mobility of CRM trainers will not much increase, nor will it be an easy task for national authorities to check whether the required criteria will be met. Hence, the GM – without an accompanying license/certificate – will have little effect on the ground.</p>
response	<p>Noted.</p> <p>Indeed, the Agency decided not to introduce a licence/certificate for the CRM trainer. However, it is not true, as stated by the commentators, that the decision was made against the advice of the Agency’s Rulemaking Group. The main reason for the Agency’s decision can be summarised as follows: Establishing a system with a licence/certificate would mean an</p>

<sup>80</sup> The text above was only included in the comments from European Cockpit Association, Vereinigung Cockpit e.V. and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.

<sup>81</sup> This title was only included in the comments from A.L.P.L. Association Luxembourgeoise des Pilotes de Ligne and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.



enormous additional administrative burden on operators and competent authorities. For CRM trainers even more criteria would have to be developed to decide whether a trainee has fulfilled the necessary requirements. The assessment of the trainees would have to be even more standardised, and one would have to consider whether an examination would be appropriate. With such a system it would also not be possible for non-licensed CRM trainers to provide at least part of the training (e.g. an aviation psychologist, not holding an adequate licence, might very well be able to provide classroom training to the benefit of the trainees).

comment

comment by:

102	A.L.P.L. - Association Luxembourgeoise des Pilotes de Ligne a.s.b.l.
142	Nuno Queiroz
171	European Cockpit Association
220	Vereinigung Cockpit e.V.
358	SNPL FRANCE ALPA
415	Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria

#### **Flight crew — initial operator's CRM training; (point 20) (page 16 of 79)**

Paragraph starting with:

*In the proposed new structure the link to ORO.FC.215 (initial operator's CRM training for commercial air transport operations) will be removed<sup>23</sup>. Therefore, based on the input received, the Agency proposes to include AMC1 ORO.FC.215 to make reference to AMC1 ORO.FC.115.<sup>82</sup>*

#### **20. Flight crew — initial operator's CRM training<sup>83</sup>**

All the changes are designed to restructure, simplify and clarify the structure of the AMCs.

response

Noted.

The Agency appreciates the general support expressed in the comment.

comment

comment by:

103	A.L.P.L. - Association Luxembourgeoise des Pilotes de Ligne a.s.b.l.
143	Nuno Queiroz
172	European Cockpit Association
221	Vereinigung Cockpit e.V.

<sup>82</sup> The text above was only included in the comments from European Cockpit Association, Vereinigung Cockpit e.V. and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.

<sup>83</sup> This title was only included in the comments from A.L.P.L. Association Luxembourgeoise des Pilotes de Ligne and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.



416	<i>Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria</i>
<b>Flight crew — operator conversion training and checking (point 21) (page 16 of 79)</b>	
Paragraph starting with:	
<i>The Agency proposes to be more specific in AMC1 ORO.FC.220, concerning the applicable elements of CRM training, by making references to the relevant AMCs. This proposal ensures consistency with similar text in other AMCs for CRM training for both flight crew and cabin crew.<sup>84</sup></i>	
<b>21. Flight crew — operator conversion training and checking<sup>85</sup></b>	
All the changes are designed to restructure, simplify and clarify the structure of the AMCs.	
response	Noted. The Agency appreciates the general support expressed in the comment.

comment	comment by:
104	<i>A.L.P.L. - Association Luxembourgeoise des Pilotes de Ligne a.s.b.l.</i>
144	<i>Nuno Queiroz</i>
173	<i>European Cockpit Association</i>
222	<i>Vereinigung Cockpit e.V.</i>
360	<i>SNPL FRANCE ALPA</i>
417	<i>Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria</i>
<b>Flight crew — recurrent training and checking (point 22) (page 16 of 79)</b>	
Paragraph starting with:	
<i>The Agency proposes to streamline AMC1 ORO.FC.230 as follows: — To delete the list of the training elements, since it is a repetition of the elements listed in Table 1 of AMC1 ORO.FC.115.</i>	
<i>— To transfer the provisions concerning the update of CRM training programme and reasoning on the purpose of assessment to AMC1 ORO.FC.115. It is the Agency's opinion that these provisions and this reasoning are more appropriate to be 'located' under the overall heading 'CRM training'.<sup>86</sup></i>	

<sup>84</sup> The text above was only included in the comments from European Cockpit Association, Vereinigung Cockpit e.V. and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.

<sup>85</sup> This title was only included in the comments from A.L.P.L. Association Luxembourgeoise des Pilotes de Ligne and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.

<sup>86</sup> The text above was only included in the comments from European Cockpit Association, Vereinigung Cockpit e.V. and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.



**22. Flight crew — recurrent training and checking<sup>87</sup>**

While we acknowledge that most of the changes are aimed at coherence and simplification, **one of them is of high relevance and would have significant unwelcome repercussions:**

EASA adds to the provision:

*“CRM assessment [alone???] should not be used as a reason for a failure of the line check”*

the following wording:

*“unless the observed behaviour contributed to a significant reduction in safety margins”.*

Due to the above, CRM may be used to fail or pass a pilot without a clear, objective impact of the overall performance and based only upon a subjective, non-defined “safety margins”.

This change repeats one of the changes to ‘Assessment of CRM skills’ in paragraph (h) of AMC1 ORO.FC.115.

CRM concept is hard to quantify, there is often some confusion on definitions and meanings and not at the least, it is prone to subjective assessments.

In fact the term “subjective assessments” already beholds one of our main concerns. It is obviously difficult for anyone to accept an evaluation which is subjective, rather than based on clearly defined criteria, concepts and terms. So the highest care must be taken that this does not happen when the license of a pilot is at stake during a check ride.

This is not to say that there cannot be improvements flagged up to a pilot as regard to CRM, but **CRM assessments – which will always contain subjective elements – should not be check-relevant**, i.e. not lead to a failure during a check ride. This was an **essential element built into the current system and must be maintained**.

We therefore **strongly oppose using CRM to fail or pass a pilot** without a clear, objective impact on the overall performance and based only upon a subjective “safety margins” definition. Hence, the proposed additional wording should be deleted.

response

Noted.

Please refer to the discussion on assessment in Chapter 2 of this CRD.

comment

comment by:

105	<i>A.L.P.L. - Association Luxembourgeoise des Pilotes de Ligne a.s.b.l.</i>
145	<i>Nuno Queiroz</i>
174	<i>European Cockpit Association</i>
223	<i>Vereinigung Cockpit e.V.</i>
361	<i>SNPL FRANCE ALPA</i>
418	<i>Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria</i>

<sup>87</sup> This title was only included in the comments from A.L.P.L. Association Luxembourgeoise des Pilotes de Ligne and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.



**Cabin crew — training elements (page 17 of 79)**

Paragraph starting with:

*As for flight crew, the Agency proposes to add a new paragraph (f) to AMC1 ORO.CC.115(e), entitled ‘training elements’. This paragraph includes explanations, if needed, for training elements which are listed in Table 1 of AMC1 ORO.CC.115(e).<sup>88</sup>*

**26. Flight crew — recurrent training and checking<sup>89</sup>**

We acknowledge that there is further work ongoing on how to effectively train the *Resilience and Startle and Surprise elements* in the classroom environment and its associated difficulties.

response

Noted.

The Agency appreciates the general support expressed in the comment. It should be noted that there is no obligation to train ‘resilience development’ and ‘surprise and startle effect’ in the classroom.

comment

comment by:

106

*A.L.P.L. - Association Luxembourgeoise des Pilotes de Ligne a.s.b.l.*

146

*Nuno Queiroz*

175

*European Cockpit Association*

224

*Vereinigung Cockpit e.V.*

362

*SNPL FRANCE ALPA*

419

*Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria*

**Cabin crew — CRM training syllabus (point 27) (page 17 of 79)**

Paragraph starting with:

*The existing Table 1 of paragraph (g) of AMC1 ORO.CC.115(e), showing the CRM training elements, has been updated to be in line with the appropriate table for flight crew (see in paragraph (g) of AMC1 ORO.FC.115). In addition, new elements have been added. As for flight crew, paragraph (g) of AMC1 ORO.CC.115(e) now also contains the amended description of the terms ‘required’ and ‘in-depth’ which are used in Table 1.<sup>90</sup>*

**27. CRM training syllabus<sup>91</sup>**

<sup>88</sup> The text above was only included in the comments from European Cockpit Association, Vereinigung Cockpit e.V. and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.

<sup>89</sup> This title was only included in the comments from A.L.P.L. Association Luxembourgeoise des Pilotes de Ligne and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.

<sup>90</sup> The text above was only included in the comments from European Cockpit Association, Vereinigung Cockpit e.V. and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.

<sup>91</sup> This title was only included in the comments from A.L.P.L. Association Luxembourgeoise des Pilotes de Ligne and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.



	We consider this change as a logical adaptation.
response	Noted. The Agency appreciates the support expressed in the comment.

comment	comment by:
107	A.L.P.L. - Association Luxembourgeoise des Pilotes de Ligne a.s.b.l.
147	Nuno Queiroz
176	European Cockpit Association
225	Vereinigung Cockpit e.V.
363	SNPL FRANCE ALPA
420	Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria
	<b>Cabin crew — no assessment of CRM skills (point 28) (page 17 of 79)</b>
	Paragraph starting with: <i>After an in-depth discussion within the Rulemaking Group, the Agency decided not to propose an assessment of cabin crew, which is in contrast to flight crew. The main reason is that an assessment of cabin crew at the present stage would be considered as overregulation.</i> <sup>92</sup>
	<b>28. Cabin crew — no assessment of CRM skills</b> <sup>93</sup>
	While pilots must be assessed in CRM skills, EASA claims that Cabin Crew must not be assessed and quotes “ <i>The main reason is that an assessment of cabin crew at the present stage would be considered as overregulation</i> ”.
	We disagree. Such an approach creates a lack of consistency and bad quality of safety regulation, given the specific and important safety role cabin crew has on board.
response	Noted. Please refer to the discussion on the assessment of cabin crew in Chapter 2 of this CRD.

comment	comment by:
108	A.L.P.L. - Association Luxembourgeoise des Pilotes de Ligne a.s.b.l.
148	Nuno Queiroz
177	European Cockpit Association

<sup>92</sup> The text above was only included in the comments from European Cockpit Association, Vereinigung Cockpit e.V. and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.

<sup>93</sup> This title was only included in the comments from A.L.P.L. Association Luxembourgeoise des Pilotes de Ligne and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.



226	Vereinigung Cockpit e.V.
364	SNPL FRANCE ALPA
421	Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria

### Cabin crew — CRM trainer (point 31) (page 18 of 79)

Paragraph starting with:

*As for flight crew CRM trainer, the Agency proposes the following:*

— *In order to improve the overall readability and structure, a separate AMC3 ORO.CC.115(e), entitled ‘Cabin crew CRM trainer and cabin crew CRM trainer examiner’, is introduced.*

— *Existing provisions concerning ‘qualification of CRM trainer’ are transferred to paragraph (a) of AMC3 ORO.CC.115(e).*

— *Provisions concerning the training, assessment, recency and renewal of the status of the CRM trainer, and provisions concerning the cabin crew CRM trainer examiner are introduced, based on the UK CAA Document No 29.<sup>94</sup>*

#### 31. Cabin crew — CRM trainer<sup>95</sup>

We consider the changes for Cabin Crew CRM trainer as positive. However, **one significant difference with Flight Crew exists and should be removed:**

*“The Cabin Crew CRM Trainer, in order to be suitably qualified, should: (i) have appropriate experience of the relevant flight operations as a cabin crew member”*

COMPARED WITH:

*A flight crew CRM trainer, in order to be suitably qualified, should: (i) have adequate knowledge of the relevant flight operations, preferably gained through current experience as flight crew member.*

Thus, while in training CRM for pilots it is not required to have flight operations experience; it is required for cabin crew. We consider it creates a lack of consistency in the rulemaking, and proposed that the respective wordings of the requirements for flight crew and for cabin crews are aligned, to require flight crew CRM trainers to have “appropriate [current] experience of the relevant flight operations”.

response

Noted.

Please refer to the discussion on the subject in Chapter 2 of this CRD.

comment

288

comment by:  
IATA (Dragos Munteanu)

328

AEA

<sup>94</sup> The text above was only included in the comments from European Cockpit Association, Vereinigung Cockpit e.V. and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.

<sup>95</sup> This title was only included in the comments from A.L.P.L. Association Luxembourgeoise des Pilotes de Ligne and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.



**Air operations — Part-ORO (p. 14 paragraph 8)<sup>96</sup>**

**Question:** Should a statement such as the following be included in the provisions concerning assessment of CRM skills? ‘In order to enhance the effectiveness of the programme, the assessment methodology should, where possible, be agreed with flight crew representatives’.

**IATA/AEA response:** No

response

Noted.

Please refer to the discussion in Chapter 2 of this CRD.

comment

291

comment by: *Air Berlin*

An assessment of the CRM skills for cabin crew could be more beneficial. Just training CRM does not necessarily means a proper implementation on board.

response

Noted.

Please refer to the discussion in Chapter 2 of this CRD.

comment

292

comment by: *Air Berlin*

Why is an assessment only planned for CRM trainers in the classroom environment and not for Trainer involved in FSTDs. They are also involved in the assessment of CRM skills and must be quite up to date with the contents of CRM training.

response

Noted.

As explained in paragraph (a) of AMC3 ORO.FC.115, the provisions are only applicable to CRM trainers responsible for classroom training, while the provisions for instructors, holding a certificate, are stipulated in Regulation (EU) No 1178/2011. In the course of the present rulemaking task, the Agency saw no need to amend the provisions of Regulation (EU) No 1178/2011 for instructors.

comment

295

comment by: *DGAC France*

With CRM becoming a potential failure factor (due to the new inclusion in AMC1 ORO.FC.230), DGAC France understands that the sensitivity of CRM assessment criteria

<sup>96</sup> The title was only included in the comment from AEA.



increases. Yet, within every commercial air transport operator, there are many other assessments/checks for which a provision on methodology agreement does not exist (in fact all, excluding FDM matters). One can wonder why CRM would have to be treated as a specific case. As a conclusion, each operator should be left responsible of its method to determine the assessment methodology, depending upon its history, operations context etc.

response

Noted.

Please refer to the discussion on assessment in Chapter 2 of this CRD.

comment

336

comment by: *Air Berlin*

NO!

The assessment should be based on scientific skills to enhance the standard of safety within the industry and not on biased self interest.

response

Noted.

Please refer to the discussion in Chapter 2 of this CRD.

comment

342

comment by: *Austrian/Tyrolean Betriebsrat Bord*

As detailed in our other comments, CRM assessment is prone to be subjective, making it hard to accept an assessment that is not based on clearly defined terms and concepts.

Allowing an inevitably subjective CRM assessment to result in the failure of a check ride which will put a pilots license at risk is not acceptable and will discredit the whole concept of CRM, especially when there is any hint or even just suspicion of abuse.

Therefore the current wording should be maintained and a follow-up-system to give tailored training to pilots whose CRM skills were found to be insufficient should be mandated.

response

Noted.

Please refer to the discussion in Chapter 2 of this CRD.

comment

347

comment by: *Austrian/Tyrolean Betriebsrat Bord*

The current text should therefore be maintained.

The reasons for the involvement of pilots' representatives remain as valid as they were when the regulation was first introduced.



CRM requires an element of trust that can only be achieved by involving pilot representatives.

The Agency's position, that participation of pilot representatives is governed by national laws disregards the fact that legal requirements placed on the employer are usually exempt from employee participation but considered a "given" in management-labour relations. This issue being technical rather than industrial makes participation even less problematic as national laws usually cover industrial representation.

While any operator would still be wise to include crew representatives, a system designed to provide utmost safety should not give operators the option to devise a less safe system by reducing pilot trust in the system due to lack of pilot representative participation.

There are some who may argue that CRM is now well established and thus such a requirement might no longer be necessary. Although there are indeed airlines where CRM is nowadays uncontested, this regrettably is not the case everywhere. Even in well established companies, the safety culture and Just Culture environment are not always as developed as they should be. In particular in such an environment, this provisions remains key to ensure CRM is widely accepted, is seen as a safety tool and is not abused to 'get rid of the rotten apples'. This provision is still very necessary to build and keep the trust in the CRM system. Also, new start-ups that cannot bank on a long-built trust and an established mature safety culture within the company. They will have to go through the process from scratch and the provision will therefore be necessary. Furthermore, we do not see a contradiction with the fact that "State laws regulate agreements between company owners and employee representatives". The requirement to include flight crew representatives in the process of developing an effective method of assessment of CRM skills, is not an industrial issue but a technical one, which is necessary to ensure CRM is understood and used as a safety tool and benefits from the trust of all involved. Finally, in companies where the current system of consulting flight crew representatives works well and has shown its benefits, the retention of the current text will not entail any disadvantages (while the deletion might well have negative consequences over time). In companies where the system does not work properly, or in newly set-up companies, the retention of this wording will make a significant positive difference. For these reasons we strongly recommend to leave this essential requirement in the text. If we pull out the guarantee that ensures trust, we risk damaging all the benefits that CRM brings to the aviation safety system.

response

Noted.

Please refer to the discussion in Chapter 2 of this CRD.

comment

392

comment by: *European Transport Workers Federation - ETF*

Page 17/18 no 29

LOFT exercises, the value of a live senior cabin crew member being involved in these exercises is incalculable for both flight crew and cabin crew as reaction would be real and valuable. Rather than dismiss LOFT exercises as too difficult to organise could it be add if the operator has the facility to arrange than this has to be considered.



response

Noted.

Based on the input received during the drafting of the NPA, the Agency decided not to require cabin crew, particularly senior cabin crew, to participate in flight crew line-oriented flying training (LOFT) exercises. Nevertheless, the operator may decide that such training is useful and, consequently, may include the participation of cabin crew in LOFT exercises in its training plan.

## 2. Explanatory Note - 2.4. Overview of the proposed amendments - Technical crew — CRM training

p. 19

comment

33

comment by: ATF - Awareness Training Fakoussa

### Technical crew — CRM training:

The errors that show up in the technical world are brain wise and neurological identical to errors made in the operating theatre, in a nuclear power station, in running an aviation company or in any administration. There is no point in separating management, pilots, cabin crew and technicians when instructing basic PRM/CRM elements. It is just the way of presenting the subjects that will require different examples out of the 4 different working environment. This requires a flexible handling of the PRM/CRM subjects. Any structured and checklist following course is not usable with a class of four such different working fields. The required mental transfer of the examples of one world to the other has to be initiated by the instructor. To have the attention of mechanics, pilots, management and cabin crew alike requires top quality instructors and not checklists.

response

Not accepted.

Firstly, it should be noted that 'Technical crew member' is defined in Annex I (Definitions) of Regulation (EU) No 965/2012 as follows: "Technical crew member' means a crew member in commercial air transport HEMS, HHO or NVIS operations other than a flight or cabin crew member, assigned by the operator to duties in the aircraft or on the ground for the purpose of assisting the pilot during HEMS, HHO or NVIS operations, which may require the operation of specialised on-board equipment." This definition, therefore, applies to certain helicopter operations and does not apply e.g. maintenance personnel (technicians).

Secondly, the Agency is of the opinion that a structured CRM training for the personnel involved is a useful mitigation measure to maintain a high level of safety.

comment

78

comment by: FAA

Page 19. Recurrent CRM training is not required for technical personnel. Research conducted in the 1990s (Helmreich et. al.) on pilots showed that the effects of CRM fade over time if not



reinforced through recurrent training and a supportive company culture.

response

Noted.

With the amended provisions, recurrent CRM training is required for technical crew. However, it should be noted that 'Technical crew member' is defined in Annex I (Definitions) of Regulation (EU) No 965/2012 as follows: "Technical crew member' means a crew member in commercial air transport HEMS, HHO or NVIS operations other than a flight or cabin crew member, assigned by the operator to duties in the aircraft or on the ground for the purpose of assisting the pilot during HEMS, HHO or NVIS operations, which may require the operation of specialised on-board equipment." This definition, therefore, applies to certain helicopter operations.

comment

234

comment by: ECOGAS/SVFB/SAMA

We have strong reservation to expand CRM for maintenance and **in strong opposition to blow up CRM for SME.**

If something concerns maintenance, it must not be placed in ORO.

For **SME expanding into** CRM training with all the administrative burden, will have a negative impact not only on their economy, **but also on safety.**

**The spread between verbal improvements for SME and actual reality is growing over time with increasing speed.**

response

Noted.

Concerning maintenance, there might be a misunderstanding: The provisions on CRM training do not include maintenance.

Operators, especially SMEs, may decide that CRM training courses are provided by contracted training organisations which then have to establish the system as prescribed (see, for instance, paragraph (a)(9) of AMC1 ORO.FC.115 of the NPA).

## 2. Explanatory Note - 2.4. Overview of the proposed amendments - Air operations — Part-SPA

p. 19

comment

34

comment by: ATF - Awareness Training Fakoussa

### HEMS medical passenger

If the term passenger includes the emergency doctor it should be defined what kind of experience (flights per month) a doctor or his medical assistant should have. Crew coordination is not a subject that can be remembered easily if not used for long time.



Today's experience is, that the majority of doctors fly only a few missions per year!!  
And signing a paper, as proof of understanding and APPLYING the CC daily is certainly not safe if the person flies once per 3 month.

response

Noted.

The term 'Medical passenger' is defined in Annex I (Definitions) of Regulation (EU) No 965/2012 as follows: "Medical passenger' means a medical person carried in a helicopter during a HEMS flight, including but not limited to doctors, nurses and paramedics."

Having in mind that these persons do not fly on a regular basis, it seems inappropriate to request CRM training. However, based on the input received, the Agency decided that a briefing of medical passengers prior to HEMS operations on 'the operator's crew coordination concept including relevant elements of CRM' is appropriate and fulfils the needs.

comment

79

comment by: FAA

Page 19. EASA has decided not to mandate CRM assessment for cabin personnel. The US takes the same position, although most large carriers do in fact assess, and even evaluate their cabin crews, on a voluntary basis.

response

Noted.

Please refer to the discussion on assessment of cabin crew in Chapter 2 of this CRD.

comment

comment by:

109

A.L.P.L. - Association Luxembourgeoise des Pilotes de Ligne a.s.b.l.

149

Nuno Queiroz

178

European Cockpit Association

227

Vereinigung Cockpit e. V.

366

SNPL FRANCE ALPA

422

Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria

### 39. HEMS medical passenger — briefing

Paragraph starting with:

*Based on the input received, the Agency proposes to add to the briefing of medical passengers prior to helicopter emergency medical service (HEMS) operations 'the operator's*



*crew coordination concept including relevant elements of CRM' (see paragraph (h) of AMC1 SPA.HEMS.135(a)).<sup>97</sup>*

We welcome that CRM topics will be included in the HEMS medical passenger and other personnel briefing.

response

Noted.

The Agency appreciates the support.

comment

comment by:

110

A.L.P.L. - Association Luxembourgeoise des Pilotes de Ligne a.s.b.l.

150

Nuno Queiroz

179

European Cockpit Association

228

Vereinigung Cockpit e. V.

375

SPNL France ALPA

**40. Cabin crew — initial training course and examination**

Paragraph starting with:

*The Agency proposes to include the amended description of 'in-depth' into the provisions for the initial cabin crew CRM training (at present: GM1 Appendix 1 to Part-CC(3)). This addition gives reason to change the 'level' of the provisions from GM to AMC (see the proposed AMC1 Appendix 1 to Part-CC(3)). This measure ensures consistency with the provisions for cabin crew for other than initial training and also with the provisions for flight crew, which both are at AMC 'level'.<sup>6</sup>*

We welcome that the provisions for training will be "upgraded" from GM to AMC and restructured for consistency and clarity purposes.

response

Noted.

The Agency appreciates the support.

**3. Proposed amendments - 3.1. Draft AMC and GM (Draft Decisions) - 3.1.1. Air operations — Decision 2014/014/R (Part-ARO)**

p. 20-21

comment

comment by:

<sup>97</sup> The paragraph above is only included in the comments from the European Cockpit Association, Vereinigung Cockpit e.V. and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.



	69	DLH
	329	AEA
	3.1.1. Air Operations— <b>Decision 2014/014/R (Part-ARO)</b>	
	...	
	<b>SUBPART GEN — GENERAL REQUIREMENTS =&gt; page 20/21<sup>98</sup></b>	
	To have adequate knowledge of the relevant flight operation and to get a realistic feeling for the impact of HPL, an inspector would have to be a former FC-member and CC-member. Is this intended by EASA. A completion of an initial CRM training is a too general statement, because every operator has its own initial training.	
response	Not accepted.	
	The Agency is of the opinion that the inspector does not necessarily need to be a former flight crew or cabin crew member. Concerning the ‘initial CRM training’, the Agency was considering to add ‘initial <u>relevant</u> CRM training’. However, it was then asked what is meant by ‘relevant’; so this would need further explanation. Finally, the Agency decided to keep the ‘simple’ phrase as proposed and to rely on the common understanding of the competent authorities.	

comment	235	comment by: ECOGAS/SVFB/SAMA
	We understand that by entering the req. from CAT to GEN it will apply to all stakeholders.	
	We consider this as unnecessary expansion of rulemaking.	
	According a risk based approach, it should be first and foremost find way into mass transport where damage potential is high.	
	Furthermore, we think the process should not be progressed before an opinion is out in regards of an change of the Basic Regulation.	
response	Not accepted.	
	The Agency, based on the input received during the drafting of the NPA, decided to expand the provisions on CRM training beyond commercial air transport. Concerning other-than complex motor-powered aircraft, this means that in addition to commercial air transport commercial specialised operations are covered. However, the Agency introduced measures to consider proportionality issues (please refer to the discussion on this subject in Chapter 2 of this CRD).	

comment	253	comment by: EUROCONTROL
---------	-----	-------------------------

<sup>98</sup> The titles are only included in the comment from AEA.



**AMC3 ARO.GEN.200 (a) (2) Management system – Page 20**

EUROCONTROL proposes to add a new item within the (a) section that deals with the qualification of inspectors, as follows:

(6): have adequate knowledge of training evaluation methods.

The justification for the proposed addition is the following: to oversee training, it is not only necessary to understand the set-up of the operations and the subjects taught, but it is also necessary to understand education and training methods, their evaluation, including the possible limitations.

response

Not accepted.

The Agency is of the opinion that '(5) have experience in the assessment of the effectiveness of training programmes...' covers the item raised.

comment

255

comment by: *ATF - Awareness Training Fakoussa*

(5) have experience in the assessment of the effectiveness of training programmes and management systems.

How does EASA define what is the required experience and how do you assess effectiveness of a programme?

To assess the effectiveness requires a frequent and repetitive control of the measurable changes and therefore is a long term project.

Where shall he gain his experience from as beginner?

CRM is not scientifically researched or examined to make clear statements about effectiveness. It is agreed though, that it has to be adjusted to a national or organizational culture. Can an inspector of one nationality inspect another nationalities crm? Or can an inspector that is familiar with one organizational culture crm assess another operators crm effectiveness after a few hours of attending? The term "have experience in the assessment of the effectiveness" is calling for some court cases to show its pure theory that has no basis.

response

Noted.

It is the competent authority that has to ensure that an adequate standard is established among the inspectors. The Agency, during its standardisation visits, has to ensure that a common standard within the EASA Member States is achieved.

comment

298

comment by: *IATA (Dragos Munteanu)*

We propose the elimination of the proposed additional text for AMC3 ARO.GEN.200(a)(2).

Training and qualification of NAA inspectors is already covered in AMC1 and AMC2



ARO.GEN.200(a)(2).

The qualification and training requirements for NAA inspectors is too detailed compared with the already existing text in AMC1 and AMC2 ARO.GEN.200(a)(2) and in combination with the checklist in GM3 ARO.GEN.300 (a)(b)(c) below, imply specific NAA oversight on the contents and execution of the CRM training. Specific oversight on CRM training is not in line with the SMS oversight and the performance based oversight principles.

response

Not accepted.

One major concern expressed during the drafting of the NPA was that at present authority oversight is not always effective in the majority of Member States. According to the input received, such an oversight is an important prerequisite for ensuring effective and high-quality CRM training. The Agency agrees that no specific provisions are needed on how to perform the oversight concerning CRM training. However, the Agency is of the opinion that provisions concerning qualification and training are to be provided to further establish oversight of the CRM training.

comment

299

comment by: IATA (Dragos Munteanu)

**GM3**

**ARO.GEN.300(a)(b)(c)**

Comment: delete this GM

A checklist for CRM training oversight is not in line with the SMS oversight and the performance based oversight principles.

Also the use of a checklist by NAA inspectors is a compliance based approach which is opposed to the possibility (stipulated in the proposal for AMC1 ORO.FC.115 sub para (a)(8)) for an operator to substitute the CRM training by a competency based approach such as ATQP.

response

Not accepted.

One major concern expressed during the drafting of the NPA was that at present authority oversight is not always effective in the majority of Member States. According to the input received, such an oversight is an important prerequisite for ensuring effective and high-quality CRM training. Based on the input received, the Agency decided to introduce as an additional measure a checklist for CRM training.

The GM, containing the checklist, is non-binding material which helps to illustrate items to be considered and is meant to support competent authorities in performing their duties. Having this in mind, the Agency is of the opinion that the checklist is not contradicting SMS oversight and a competency-based approach.

comment

333

comment by: IATA (Dragos Munteanu)



General consideration on the qualification of flight or cabin crew CRM trainer.

There is a requirement in AMC3 ORO.FC.115 (b) and AMC3 ORO.FC.115(e) (a) for the CRM trainer to be trained in human performance and limitation (HPL) and group management, group dynamics and personal awareness. There is a lack of guidance, recognized standards in these fields, on the aviation side. No clear view on who is entitled to give such training.

response

Noted.

The responsibility is given to the operator, upon agreement with the competent authority, to decide how this training is provided.

comment

35

comment by: *ATF - Awareness Training Fakoussa*

### **AMC3 ARO.GEN.200(a)(2) Management system**

#### **QUALIFICATION AND TRAINING — CREW RESOURCE MANAGEMENT (CRM)**

Qualification of the inspectors seems to be based solely on ticking a certain training program up to (3). Additional training in the fields of group management, group dynamics and personal awareness is checked how? To my knowledge ( now 25 years in CRM training) many CRM trainers have not had that additional training and yet are certified. The UK CAA deleted that sentence of additional training completely (Cap 737). If the same happens with the inspectors there is no stopbar to ineffective CRM training like it is up to today.

### **GM3 ARO.GEN.300(a);(b);(c) Oversight**

#### **CHECKLIST FOR CRM TRAINING OVERSIGHT**

What is meant by development? The term does not make clear what is asked for.

Content of the syllabus is open to interpretation. Better “general overview of the CRM course target”

Qualification of the CRM trainer: the part “Additional training in the fields of group management, group dynamics and personal awareness” is checked by whom and how? This is the most important part of the qualification of any trainer. It should therefore be checked by the NAAs inspector and not by the operator.

The word classroom leaves it up to the very subjective and individual inspectors judgement. This is asking for trouble. Define: classroom size /participants/ temperature /light/air (fresh or conditioned etc. what precisely will be checked? Otherwise better dont check it.

Training analysis requires pre-course reading and study. What if we find a very creative CRM trainer who does not read but invents very effective tools? Will an inspector be able to follow that line if he checks for study?

Integration of different training methods: is that a requirement or a nice to have?

And which inspector would have the qualification to question and understand new und therefore different methods. My experience is, that only few people in aviation are creative enough to understand that many ways lead to Rome there are many ways to instruct and train apart from rules and regulations that restrict the effectivity of good instructors and trainers. IF EASA could open a door to the acceptance of new and different training and



instructing methods it would certainly lead to more safety. But that requires to be “checked” in an open minded way not based on checklists.

Effectiveness of training will be measured how and who will assess it?

This checklist is actually asking for trouble. Either the inspectors are really competent, than they can evaluate the effectiveness of the course content, the trainer and the method without a checklist. Or they are not competent enough and will , based on that checklist, create pointless problems.

The development of such a list should be based on a thorough investigation of what will be accepted and on broad experience in measuring CRM trainers effectiveness. There are no scientific studies being made to my knowledge.

Could this list just be called a support and supplementary list. That might reduce the zone of possible conflict.

response

Noted.

On AMC3 ARO.GEN.200(a)(2): It is the competent authority that has to ensure that an adequate standard is established among inspectors. The Agency, during its standardisation visits, has to ensure that a common standard within the Member States is achieved.

On GM3 ARO.GEN.300(a);(b);(c) (checklist): The GM, containing the checklist, is non-binding material which helps to illustrate items to be considered and is meant to support competent authorities in performing their duties.

**3. Proposed amendments - 3.1. Draft Acceptable Means of Compliance (AMC) and Guidance Material (GM) (Draft Decisions) - 3.1.2. Air operations — Decision 2014/017/R (Part-ORO) - Subpart FC - AMC1 ORO.FC.115 Crew resource management (CRM) training - (a) General**

p. 21-23

comment

1

comment by: *NFLC, Cranfield University, UK*

Para 9. Is the intent of this paragraph the same as the previously removed AMC1.ORO.FC115&215 b 4, where CRM training is explicitly permitted by a third party. If not, can this be permitted.

response

Noted.

The intention of paragraph (a)(9) of AMC1 ORO.FC.115 of the NPA is the same as of the deleted paragraph (a)(4) of AMC1 ORO.FC115&215, namely permitting a third party to perform CRM training. Since the proposed text of paragraph (a)(9) of AMC1 ORO.FC.115 of the NPA might lead to a misunderstanding, it has been rephrased.

comment

8

comment by: *Stefano Cignoni*



(3) Computer based Training: in my opinion the introduction of computer based training is in contrast with the role of CRM Trainer. In other words we invest in CRM Trainers qualification and training and then their duties are replaced by computer based training.

response

Noted.

CRM training performed by a trainer and computer-based CRM training can supplement each other.

comment

40

comment by: *Ryanair***(a) General****(6) Combined CRM training for flight crew, cabin crew and technical crew**

**Comment:** The inclusion of specified hours/ duration of this training is 'over-regulation'. An operator should ensure sufficient time is allocated to ensure effective combined training is delivered. The proviso added that these hours may be reduced when 'faultless co-operation and co-ordination among crewmembers' is met is completely unrealistic and impossible to determine given the nature of CRM.

If specific hours are applied then they should be reasonably distributable over the three year cycle that applies. Therefore we would consider that 6 hours is adequate allowing for 2 hours dedicated to combined CRM each year over three years taking into account the minimum requirements specified in AMC1 ORO.FC.115 (6) (iii).

**Proposed text:**

(ii) The combined training should be a minimum of ~~8~~ 6 hours over a period of 3 years. The minimum hours may be reduced when evidenced by the operator's management system, i.e. e.g. when the operational data collected and analysed demonstrate faultless effective cooperation and coordination among crew members.

response

Noted.

Please refer to the discussion in Chapter 2 of this CRD. The Agency, after further discussion with the Review Group, decided to delete completely the statement on a possible reduction of minimum training hours.

comment

41

comment by: *Ryanair***(6) Combined CRM training for flight crew, cabin crew and technical crew****Comment:**

There must be a provision within this AMC to allow 'Combined CRM training' instruction for Flight crew, Cabin Crew and/or Technical Crew by either Flight Crew or Cabin Crew CRM Trainers in the classroom environment. Currently there is no clear provision for this and



possible conflict in AMC3 ORO.FC.115(b).

**Proposed text:**

(v) Combined CRM training should be conducted by flight crew or cabin crew CRM Trainers

(vi) There should be effective liaison between flight crew, cabin crew and technical crew training departments. Provision should be made for transfer of relevant knowledge and skills between flight crew, cabin crew and technical crew CRM trainers.

response Accepted.

The text has been amended accordingly.

comment 54

comment by: *DLH*

(6)(ii)

A faultless cooperation and coordination among humans does not exist. This lies in the nature of human beings and is one of the topics in HPL-training. Therefore the last sentence in the paragraph is superfluous.

(6)(v)

This paragraph is very vague. How could "provision" look like and what "relevant knowledge" should be transferred?

The risk with this rule is, that NAAs could have different interpretations about the "provisions" and "knowledge".

response Noted.

Please refer to the response to comment No 359 (covered under No 3).

comment 80

comment by: *FAA*

Page 22. Some old but still relevant guidance on the integration of CRM into procedures and checklists is available on-line.

Seamster, T.L., Boehm, D.A., Holt, R.W. & Schultz, K. (1998). Developing Advanced Crew Resource Management (ACRM) Training: A Training Manual. Federal Aviation Administration.

[www.hf.faa.gov/docs/dacrmtd.pdf](http://www.hf.faa.gov/docs/dacrmtd.pdf)

response Noted.

The Agency appreciates the information provided.



comment 189 comment by: *easyJet Airlines Ltd.*

Paragraph 6

(i)

We would like this not mandated, although we endeavour to have combined training. *“Operators should, as far as practicable, provide combined training for flight crew and cabin/technical crew, including briefing and debriefing.”*

(ii)

We would like to see this minimum requirement reduced to 4 hours or removed to allow us to deliver compliant CRM training under ATQP and Bi-Annual recurrent programs.

response Not accepted.

On paragraph (a)(6)(i) of AMC1 ORO.FC.115 of the NPA: With the amended text, the Agency intends to emphasise the need of combined CRM training. The clause ‘as far as practicable’ would do the opposite and is, therefore, not accepted.

On paragraph (a)(6)(ii) of AMC1 ORO.FC.115 of the NPA: Please refer to the discussion on minimum training times in Chapter 2 of this CRD.

comment 192 comment by: *FPA SSC*

Proposed text:

(6) Combined CRM training for flight crew, cabin crew and technical crew

(i) Operators should provide combined training for flight crew, cabin crew and technical crew during recurrent CRM training.

(ii) The combined training should be a minimum of 8 hours over a period of 3 years. The minimum hours may be reduced to 6 hours over a period of 3 years, when the operational data collected and analysed demonstrates faultless cooperation and coordination among crew members as evidenced by the operator’s safety management system.

Comments:

Faultless needs to be defined. The statement "may be reduced" is too vague. An absolute minimum level of training should be set - 6 hours in 3 years, for example.

response Noted.

After further discussion, the Agency decided to delete the complete statement concerning a



possible reduction of minimum training times. Concerning the minimum training times, please refer to the discussion in Chapter 2 of this CRD.

comment

236

comment by: ECOGAS/SVFB/SAMA

**Technical Crew:** it must be defined that with technical crew there are integrated members of Flight Crew addressed.

response

Noted.

‘Technical crew member’ is defined in Annex I (Definitions) of Regulation (EU) No 965/2012 as follows: “‘Technical crew member’ means a crew member in commercial air transport HEMS, HHO or NVIS operations other than a flight or cabin crew member, assigned by the operator to duties in the aircraft or on the ground for the purpose of assisting the pilot during HEMS, HHO or NVIS operations, which may require the operation of specialised on-board equipment.”

comment

258

comment by: ATF - Awareness Training Fakoussa

#### (8) Competency-based CRM training

Whenever practicable, the compliance-based approach concerning CRM training may be substituted by a competency-based approach such as evidence-based training. In this context, CRM training should be characterised by a performance orientation, with emphasis on standards of performance and their measurement, and the development of training to the specified performance standards. CRM training should be an essential element of the alternative training and qualification programme (ATQP) described in ORO.FC.A.245, when the operator applies ATQP.

This sentence is very complicated and I wonder which 2 pilots and one airplane company will be able to understand and follow that strange requirement. The basic message is already in here:

#### (5) Integration into flight crew training

CRM principles should be integrated into relevant parts of flight crew training and operations including checklists, briefings, emergency and abnormal procedures.

I suggest to reduce the competency based training to: CRM training should be an essential element of the alternative training and qualification programme (ATQP) described in ORO.FC.A.245, when the operator applies ATQP.

response

Not accepted.



With the provision on competency-based CRM training, the Agency wants to give operators the opportunity to apply alternative training concepts. It is up to the operator to decide. It can be expected that this approach towards performance-based rulemaking will be expanded in the future. The Agency is of the opinion that the text proposed by the commentator would not bring across the message as intended.

comment 300

comment by: IATA (Dragos Munteanu)

**AMC1 ORO.FC.115 (a)(1) Crew resource management (CRM) training**

The aircraft is in the list of places where to conduct the training, (a)(1). In the following points all the other environments (classroom, CBT, FSTDs) are somewhat clarified but not the aircraft. It should be better described in the NPA how the aircraft should be use as a training environment (does EASA consider that CRM training is part of the Line Flying Under Supervision, otherwise it should be considered only as an assessment environment).

response Noted.

Please refer to the response to comment No 359 (covered under No 5).

comment 301

comment by: IATA (Dragos Munteanu)

Comment: In (a)(1) delete “(classroom and computer-based)”.

By adding, between brackets, “classroom and computer-based” the non-operational environment has been indirectly defined. This definition can hinder new future innovative solutions that can still be a non-operational environment.

response Noted.

Please refer to the response to comment No 359 (covered under No 5).

comment 302

comment by: IATA (Dragos Munteanu)

**AMC1 ORO.FC.115 sub para (a)(1)**

By giving examples, “such as group discussions, team task analysis, team task simulation and feedback” there is a risk that NAA inspectors will interpret this as an exhaustive list which can hinder new future innovative solutions. The text should offer the possibility of any option the Operator validates as effective through its Management System and subject matter experts.



response Not accepted.  
The Agency is of the opinion that the phrase ‘such as’ prevents inspectors from interpreting this as an exhaustive list.

comment 303 comment by: IATA (Dragos Munteanu)

**AMC1 ORO.FC.115 sub para (a)(5)**

The text which mentions that CRM principles should be integrated in “...operations including checklist, briefings, emergency and abnormal procedures.” is not pertinent. The chapter is about CRM training, not operations. In EU-OPS there was the same principle but not in the training part.

response Noted.  
Please refer to the response to comment No 359 (covered under No 8).

comment 304 comment by: IATA (Dragos Munteanu)

**AMC1 ORO.FC.115 sub para (a)(6)(i)**

The combined training for flight crew, cabin crew and technical crew is unsustainable for many reasons. Most operators have outsourced technical crews, the technical crews have different training requirements, facilities etc. By maintaining this provision there will be an imbalance between operators which still have their own technical personnel and the ones which decided to subcontract.

Also it will be extremely difficult to harmonize training schedules between all these categories of personnel. We suggest to remove the provision and replace with “Operators should develop their CRM recurrent courses to take into account issues of cooperation between flight crews, cabin crews and technical crews. Where feasible combined training should be considered.”

response Not accepted.  
Please refer to the response to comment No 359 (covered under No 9).

comment 305 comment by: IATA (Dragos Munteanu)

**AMC1 ORO.FC.115 sub para (a)(6)(ii)**

Comment: delete “i.e. when the operational data collected and analysed demonstrate



faultless cooperation and coordination among crew members”.

We consider this paragraph superfluous since it is unrealistic to attain the "faultless" level. This condition for reducing the minimum hours of the combined CRM training is too strict. However the option to reduce training based on analyzed operational data (in general) is welcomed and supported.

To mention typical examples, the combined CRM training should be a minimum of 8H00 (CRM training for FC combined with CC) and the initial operator’s CRM training has increased by 8H00 (24H00 iso 16H00) without any safety justification.

Hours requirement are not in line with Agency objective to promote the Performance Based Regulation and IATA considers that the management system is in a better position to determine the operator needs in combined training.

The best place to perform combined CRM training is during common Flight Crew and Cabin Crew recurrent training such as safety and emergency equipment training or security training in order to integrate CRM at professional and very practical level.

IATA recommends to mention clearly the possibility for the operator training department:

- a) To combine CRM training and safety and emergency equipment training, security training...
- b) To freely determine the number of hours of combined training after management system data analysis.

response

Noted.

Please refer to the response to comment No 359 (covered under No 10).

comment

306

comment by: IATA (Dragos Munteanu)

**AMC1 ORO.FC.115 sub para (a)(6)(iv)**

Comment: delete sub para (a)(6)(iv)

The paragraph is too detailed and already covered in sub para (a)(6)(iii)(a). Medical passengers on board are just one example where effective communication, coordination etc must be addressed. Unruly passengers, security personnel, other operational personnel (AMC3 ORO.MLR.100 Operations manual — general Ch 5.5 of Operations Manual Part A / General/Basic) can be examples, whereas these passengers are not separately mentioned.

response

Not accepted.

The term ‘Medical passenger’ is defined in Annex I (Definitions) of Regulation (EU) No 965/2012 as follows: “‘Medical passenger’ means a medical person carried in a helicopter during a HEMS flight, including but not limited to doctors, nurses and paramedics.” This definition is restricted to certain helicopter operations and does not include, for instance, a doctor who is a regular passenger on a CAT operation.



comment

307

comment by: IATA (Dragos Munteanu)

**AMC1 ORO.FC.115 sub para (a)(8)**

IATA Comment: We consider that the performance based approach should be the appropriate way to improve the high level of CRM training already existing in the industry. IATA support the opportunity for an operator to develop a competency based approach for CRM training.

Hours requirements are not in line with Agency objective to promote the Performance Based Regulation and considers that the management system is in a better position to determine the operator needs in combined training.

We consider that instead regulating minimum number of hours for courses, Operators should be allowed to determine their own needs based on appropriate assessments, practical relevant experience and quality of content measures for these courses.

response

Noted.

The Agency appreciates the support concerning competency-based CRM training. Concerning minimum training times, please refer to the discussion in Chapter 2 of this CRD.

comment

359

comment by: AEA

**1. AMC3 ARO.GEN.200(a)(2)**

Comment: Delete this AMC.

Training and qualification of NAA inspectors is already covered in AMC1 and AMC2 ARO.GEN.200(a)(2).

Secondly, the qualification and training requirements for NAA inspectors in combination with the checklist in GM3 ARO.GEN.300 (a)(b)(c) below, imply specific NAA oversight on the contents and execution of the CRM training. This is not in line with the SMS oversight and the performance based oversight principles.

**2. GM3 ARO.GEN.300(a)(b)(c)**

Comment: delete this GM

A checklist for CRM training oversight is not in line with the SMS oversight and the performance based oversight principles.

Also the use of a checklist by NAA inspectors is a compliancy based approach which is contrary to the possibility (stipulated in the concept AMC1 ORO.FC.115 sub para (a)(8)) for an operator to substitute the CRM training by a competency based approach such as ATQP.

**3. Proposed amendments - 3.1. Draft Acceptable Means of Compliance (AMC) and Guidance Material (GM) (Draft Decisions) - 3.1.2. Air operations — Decision 2014/017/R (Part-ORO) - Subpart FC - AMC1 ORO.FC.115 Crew resource management (CRM) training - (a) General**

**(6)(ii)**



A faultless cooperation and coordination among humans does not exist. This lies in the nature of human beings and is one of the topics in HPL-training. Therefore the last sentence in the paragraph is superfluous.

#### 4. (6)(v)

This paragraph is very vague. How could "provision" look like and what "relevant knowledge" should be transferred? The risk with this rule is that NAAs could have different interpretations about the "provisions" and "knowledge".

#### 5. AMC1 ORO.FC.115 sub para (a)(1)

Comment: In (a)(1) delete "(classroom and computer-based)".

By adding, between brackets, "classroom and computer-based" the non-operational environment has been indirectly defined. This definition can hinder new future innovative solutions that can still be a non-operational environment, such as 'face time'.

Comment: It should be better described how the aircraft should be use as a training environment. Does EASA consider that CRM training is part of the LFUs? Otherwise it should be considered only as an assessment environment.

#### 6. AMC1 ORO.FC.115 sub para (a)(1)

Comment: In (a)(1) delete "such as group discussions, team task analysis, team task simulation and feedback".

By giving examples, the risk becomes apparent that NAA inspectors will interpret this as an exhaustive list which can hinder new future innovative solutions.

#### 7. AMC1 ORO.FC.115 sub para (a)(3)

Comment: In (a)(3), what is meant with "a stand-alone training method" ? Please clarify.

#### 8. AMC1 ORO.FC.115 sub para (a)(5)

Where it says that CRM principles should be integrated in "...operations including checklist, briefings, emergency and abnormal procedures." is not pertinent. The chapter is about training, not operations. In EU-OPS there was the same principle but not in the training part.

#### 9. AMC1 ORO.FC.115 sub para (a)(6)(i)

The combined training for flight crew, cabin crew and technical crew is unsustainable for many reasons. Most operators have outsourced technical crews, the technical crews have different training requirements, facilities etc. By maintaining this provision there will be an imbalance between operators which still have their own technical personnel and the ones which decided to subcontract.

Also it will be extremely difficult to harmonize training schedules between all these categories of personnel. We suggest to remove the provision and replace with "Operators should develop their CRM recurrent courses to take into account issues of cooperation between flight crews, cabin crews and technical crews".

#### 10. AMC1 ORO.FC.115 sub para (a)(6)(ii)

Comment: delete "i.e. when the operational data collected and analysed demonstrate faultless cooperation and coordination among crew members".

Because the abbreviation 'i.e' (meaning: it est) is used, this is the minimum condition (faultless?) for reducing the minimum hours of the combined CRM training. This is too strict. However the option to reduce training based on analysed operational data (in general) is



welcomed and supported.

To mention typical examples, the combined CRM training should be a minimum of 8H00 (CRM training for FC combined with CC) and the initial operator's CRM training has increased by 8H00 (24H00 iso 16H00) without any safety justification.

Hours requirement are not in line with Agency objective to promote the Performance Based Regulation and considers that the management system is in a better position to determine the operator needs in combined training.

The best place to perform combined CRM training is during common Flight Crew and Cabin Crew recurrent training such as safety and emergency equipment training or security training in order to integrate CRM at professional and very practical level.

AEA recommends to mention clearly the possibility for the operator training department:

a) To combine CRM training and safety and emergency equipment training, security training...

b) To freely determine the number of hours of combined training after management system data analysis.

**11. AMC1 ORO.FC.115 sub para (a)(6)(iv)**

Comment: delete sub para (a)(6)(iv) (and renumber para (a)(6)(v) accordingly)

This is already covered in sub para (a)(6)(iii)(A). Medical passengers on board are just one example where effective communication, coordination etc must be addressed. Unruly passengers can be another example, whereas these passengers are not separately mentioned.

**12. AMC1 ORO.FC.115 sub para (a)(8)**

Comment: We welcome this paragraph and support the opportunity for an operator to develop a competency based approach for CRM training.

**13. AMC1 ORO.FC.115 sub para (a)(8)**

Comment: delete "such as evidence-based training".

Evidence-based training (EBT) as defined by ICAO is only applicable to recurrent training.

**14. AMC1 ORO.FC.115 sub para (a)(8)**

Comment: delete the last sentence of this sub para (beginning with 'CRM training should be ...' etc.) and insert this sentence for clarity in a new para (a)(9).

Renumber para (a)(9) accordingly.

response

Partially accepted.

**On No 1 (AMC3 ARO.GEN.200(a)(2)):**

Not accepted. One major concern expressed during the drafting of the NPA was that at present authority oversight is not always effective in the majority of Member States. According to the input received, such an oversight is an important prerequisite for ensuring effective and high-quality CRM training. The Agency agrees that no specific provisions are needed on how to perform the oversight concerning CRM training. However, the Agency is of the opinion that provisions concerning qualification and training are to be provided to further establish the oversight of the CRM training.



**On No 2 (GM3 ARO.GEN.300(a)(b)(c)):**

Not accepted. One major concern expressed during the drafting of the NPA was that at present authority oversight is not always effective in the majority of Member States. According to the input received, such an oversight is an important prerequisite for ensuring effective and high-quality CRM training. Based on the input received, the Agency decided to introduce as an additional measure a checklist for CRM training.

The GM, containing the checklist, is non-binding material which helps to illustrate items to be considered and is meant to support competent authorities in performing their duties. Having this in mind, the Agency is of the opinion that the checklist is not contradicting SMS oversight and a competency-based approach.

**On No 3 (paragraph (a)(6)(ii) of AMC1 ORO.FC.115):**

Noted. After further discussion, the Agency decided to delete the complete statement concerning a possible reduction of the minimum training times.

**On No 4 (paragraph (a)(6)(v) of AMC1 ORO.FC.115):**

Noted. Proposals for a more precise wording are welcome. However, the Agency is reluctant to expand this text, e.g. by adding additional GM to the applicable framework to further explore the terms used. It is expected that the operator will use common understanding and, if needed, to coordinate with the competent authority.

**On No 5 (paragraph (a)(1) of AMC1 ORO.FC.115):**

Not accepted. The Agency, after further discussion with the Review Group, does not see currently the need to specify the text any further.

**On No 6 (paragraph (a)(1) of AMC1 ORO.FC.115):**

Not accepted. The Agency is of the opinion that the phrase 'such as' prevents inspectors from interpreting this as an exhaustive list.

**On No 7 (paragraph (a)(3) of AMC1 ORO.FC.115):**

Noted. The Agency is of the opinion that this term is self-explanatory, namely the one-and-only method for CRM training.

**On No 8 (paragraph (a)(5) of AMC1 ORO.FC.115):**

Noted. The Agency is of the opinion that the integration of CRM principles into flight crew training should be highlighted. Please note that the 'old' provisions contain a similar statement, although they refer to recurrent training (see paragraph (e)(1)(i) of AMC1 ORO.FC.115&215).

**On No 9 (paragraph (a)(6)(i) of AMC1 ORO.FC.115):**

Not accepted. Based on the input received, the Agency came to the conclusion that it is necessary to 'strengthen' the provisions concerning combined CRM training. Having in mind possible organisational problems, one should consider that the minimum training time is only 6 training hours over a period of 3 years (please refer to the Decision; in the NPA it was '8 hours over 3 years'). In addition, one has to bear in mind the term 'Technical crew member' as defined in Annex I (Definitions) of Regulation (EU) No 965/2012: "Technical crew member' means a crew member in commercial air transport HEMS, HHO or NVIS operations other than a flight or cabin crew member, assigned by the operator to duties in the aircraft or on the ground for the purpose of assisting the pilot during HEMS, HHO or NVIS operations, which may require the operation of specialised on-board equipment." This



definition is restricted to certain helicopter operations and does not include, for instance, maintenance personnel (technicians).

**On No 10 (paragraph (a)(6)(ii) of AMC1 ORO.FC.115):**

Noted. After further discussion, the Agency decided to delete the complete statement concerning a possible reduction of the minimum training times. Concerning minimum training times in general, please refer to the discussion on this subject in Chapter 2 of this CRD.

**On No 11 (paragraph (a)(6)(iv) of AMC1 ORO.FC.115):**

Not accepted. The term 'Medical passenger' is defined in Annex I (Definitions) of Regulation (EU) No 965/2012 as follows: "'Medical passenger' means a medical person carried in a helicopter during a HEMS flight, including but not limited to doctors, nurses and paramedics." This definition is restricted to certain helicopter operations and does not include, for instance, a doctor who is a regular passenger on a CAT operation.

**On No 12 (paragraph (a)(8) of AMC1 ORO.FC.115):**

Noted. The support is appreciated.

**On No 13 (paragraph (a)(8) of AMC1 ORO.FC.115):**

Not accepted. After further discussion with the Review Group, the Agency decided to keep the phrase 'such as evidence-based training'.

**On No 14 (paragraph (a)(8) of AMC1 ORO.FC.115):**

Partially accepted. The Agency, after discussion with the Review Group, decided to establish a separate subparagraph (ii) in paragraph (a)(8) for the statement 'CRM training should be...'.

comment

393

comment by: *Thomson Airways*

The AMC does not define what constitutes joint CRM training. Would, for example, joint discussion about safety and emergency procedures constitute CRM training, even if only a proportion was directly to do with the human factors elements of these procedures.

Propose that AMC1 ORO.FC.115 (6) (i) should read:

"Operators should provide combined training for flight crew, cabin crew and technical crew which should include elements of CRM training"

response

Not accepted.

The content of AMC1 ORO.FC.115 is on CRM training. Subsequently, paragraph (a)(6) of AMC1 ORO.FC.115 of the NPA covers separate combined CRM training. To make this even clearer, the Agency decided to amend the first sentence to read: 'Operators should provide combined CRM training for...'.

The operator has to establish a CRM training plan listing the elements which are, based on the operator's opinion, related to CRM training. This training plan then has to be approved by the competent authority; if needed, to be explained and to be discussed beforehand.



comment	394	comment by: <i>Thomson Airways</i>
	<p>paragraph (6) (ii) requires a minimum of 8 hours training over 3 years. As realistically only about 6 hours of useful training could be completed in a day (assuming introductions, breaks, lunch, wash-up etc...) propose that 8 hours is reduced to 6 hours.</p>	
response	<p>Noted.</p> <p>Please refer to the discussion on minimum training times in Chapter 2 of this CRD.</p>	

comment	395	comment by: <i>Thomson Airways</i>
	<p>AMC1 ORO.FC.115 (8) Competency-based CRM training</p> <p>It is our understanding that this section allows an operator to completely replace all aspects in this AMC with an evidence based approach. If so, we fully support this section. We would presume that this allows a company which has ATQP approval to develop its own CRM programme?</p> <p>For clarity propose the following words at the end of this paragraph:</p> <p>"Where ATQP principles are applied, the requirements of paragraph (g) CRM training syllabus may be modified accordingly."</p>	
response	<p>Noted.</p> <p>The understanding of Thomson Airways is correct. However, after further discussion with the Review Group, the Agency decided that there is no need to give further information in the provisions.</p>	

**3. Proposed amendments - 3.1. Draft Acceptable Means of Compliance (AMC) and Guidance Material (GM) (Draft Decisions) - 3.1.2. Air operations — Decision 2014/017/R (Part-ORO) - Subpart FC - AMC1 ORO.FC.115 Crew resource management (CRM) training - (b)-(c)-(d)-(e)**

p. 23

comment	36	comment by: <i>Skytrain Aviation</i>
	<p>NPA 2014-17</p> <p><b>SUBPART FC – Flight Crew</b></p> <p><b>Section 1 - Common Requirement.</b></p> <p><b>AMC 1ORO FC115 CRM Training</b></p>	



**CRM Training – Multi Pilot Operations**

**(b) Initial Operators CRM Training**

**Comment:**

Clarify what should be in the 16 hours of classroom training and what the other 8 hours given over to. ?

Putting a specific time limit makes for instructors trying to fill time rather than giving quality tuition.

In the past I have seen auditors making observations like “ The CRM Facilitator did not complete the 8 hrs as specified in our Ops Manual Part D, they only completed 7hrs 30 mins”. This is the sort of comments that would be more prevalent if timings were specified and as stated above the quality of instruction would diminish.

As a CRM Facilitator / Instructor with over 15 years’ experience I have noted that sometimes the points are made in a 7 hour day and sometimes (with discussions going on) it could take 9 hours.

I would recommend removing specific timings and inserting – **3 days of which 2 will be classroom training.**

**(f) (4) Surprise and Startle Effect.**

**Comment:**

This should be assigned to a FSTD as in a classroom it would be difficult to effectively “ Surprise or Startle” students. However having said that as case studies are discussed the “ Surprise or Startle Effect” could be higleted / discussed.

response

Noted.

Please refer to the discussion on minimum training times and on the surprise and startle effect in Chapter 2 of this CRD.

Concerning ‘surprise and startle effect’: the Agency deliberately does not prescribe where to perform which training. The Agency agrees with the commentator that it might be a useful approach to explain and discuss the ‘theory’ in classroom and to ‘practise’ in the FSTD.

comment

comment by:

55

DLH

365

AEA

(8)(b)

There is no empirical proof that more initial training is required. 2 days of initial training have always been very successful. More training doesn’t make sense, because of the lack of practical experience of the trainees.

Many operators have very successful initial trainings with 1 day before LFUS and 1 day during the first year. They shouldn’t be forced to change their training concepts.



response

Noted.

Please refer to the discussion on minimum training times in Chapter 2 of this CRD.

comment

comment by:

121 A.L.P.L. - Association Luxembourgeoise des Pilotes de Ligne a.s.b.l.  
 151 Nuno Queiroz  
 180 European Cockpit Association  
 244 Vereinigung Cockpit e.V.  
 380 SNPL FRANCE ALPA  
 423 Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria

### AMC1 ORO.FC.115 Crew resource management training

#### CRM TRAINING — MULTI-PILOT OPERATIONS

##### e) Command course — CRM training

##### Text proposed by EASA:<sup>99</sup>

AMC1 ORO.FC.115 Crew resource management (CRM) training

#### CRM TRAINING — MULTI-PILOT OPERATIONS

##### e) Command course — CRM training

*The operator should ensure that elements of CRM are integrated into the command course, as specified in Table 1 of paragraph (g).*

##### Suggestion for the text:<sup>100</sup>

*“The operator should ensure that elements of CRM are integrated into the command course, as specified in Table 1 of paragraph (g). **The minimum duration of the Command course CRM Training will be 24 hours, of which at least 16 are classroom training.**”*

EASA’s proposal establishes a minimum time frame for initial operator CRM training (24 hrs.) and combined FC/CC recurrent training (8hrs each 3 yrs.).

However, **no minimum time frame for command course is provided, in spite of the findings of recent accident investigations** which reveal lack of adequate Captaincy CRM training.

We are convinced that the Command CRM training is of the outmost importance. It establishes interactive elements which require classroom attendance, feedback and high quality. As long as **no minimum timeframe for command course has been established**, it will be impossible for national authorities to verify if provision is made for this type of training or not (allowing less than scrupulous operator to “comply” with on-line or computer-based stand-alone training).

<sup>99</sup> The text proposed by EASA was only included in the comment from European Cockpit Association.

<sup>100</sup> The suggestion for the text was only included in the comments from Nuno Queiroz, European Cockpit Association, Vereinigung Cockpit e.V. and SNPL FRANCE ALPA.



	We therefore suggest to add a requirement for 24 hours, of which at least 16 are classroom training.
response	Not accepted. Please refer to the discussion on minimum training times in Chapter 2 of this CRD.

comment	256	comment by: ATF - Awareness Training Fakoussa
	(7) Management system CRM training should address hazards and risks identified by the operator's management system described in ORO.GEN.200. That is not realistic with today's SMS culture. Many hazards and risks are not being reported, as the term "no blame culture", being written and executed and audited, does not mean, employees are having no more fear to report. The real "events" are to be heard at the table after a few beers. None of what has been experienced and went well and was told at the table appears in any SMS. Therefore it is an illusion to think that those few reported events that usually ended without major disaster are sufficient for the CRM training. The fear that still exists despite the "no blame culture" is to be addressed, the feeling of fear to lose one's face, the fear to be outcasted or ridiculed are our real problem. So the phrase should be: CRM training should address the fear NOT to report all hazards and risks and that could NOT be identified by the operator's management system described in ORO.GEN.200.	
response	Partially accepted. The Agency agrees that 'CRM training should address the fear not to report all hazards and risks', having in mind that this is an issue of the operator's just culture. However, the Agency does not agree to rephrase the proposed wording of paragraph (a)(7) of AMC1 ORO.FC.115 of the NPA.	

comment	257	comment by: ATF - Awareness Training Fakoussa
	It would be more effective to stick to a 14 hours initial classroom (2 days) and to have the yearly one day classroom repetition as obligation. The additional hours (1 day) for training in a simulator or an FTSD should be added later on, after EASA has a clear CRM trainer training program for flight and type rating instructors installed. At the moment obviously every PPL instructor is automatically an airmanship instructor without even knowing what is meant by that word. But he is supposed to train it and as examiner to assess it. The same problem we have with FI and TRI being asked to integrate CRM elements into all appropriate phases..... without having had a special training to do so. Also some companies save one day per 3 years by sending the crews every 3 years to a 2 days initial course. But what makes knowledge to become a habit is repetition. So EASA	



response	<p>should put the emphasis much more on the frequent repetition and not on a heavy initial.</p> <p>Noted.</p> <p>The Agency is of the opinion that the training schedule as developed considers both the need for initial training as well as the need for recurrent and 'advanced' CRM training. However, for minimum training times please refer to the discussion in Chapter 2 of this CRD.</p>
comment	<p>259 <span style="float: right;">comment by: ATF - Awareness Training Fakoussa</span></p> <p>A PRM/CRM programme has to be updated on a daily basis. Every change in the managements philosophy, every new procedure, every new incident requires an immediate reaction in the PRM/CRM programme. So a continuous and flexible updating might be a better way to have operators safety improving by the day, instead of a structured, completely inflexible and checked and crosschecked and assessed approach to PRM /CRM.</p>
response	<p>Noted.</p> <p>The Agency is of the opinion that a structured and approved CRM training plan is needed as a basis. It is expected that the operator will consider in its training plan that latest developments are to be trained.</p>
comment	<p>260 <span style="float: right;">comment by: ATF - Awareness Training Fakoussa</span></p> <p>(1) The operator should ensure that elements of CRM are integrated into all appropriate phases of recurrent training every year, as specified in Table 1 of paragraph (g). The operator can ensure this only after EASA has specified what kind of additional training is required for a FI or TRI or examiner to be able to TRAIN PRM/CRM. Todays max . 5 days instructor training to not qualify any instructor to integrate PRM/CRM elements. Instructors are trained to instruct manual skills and not mental abilities and certainly not changes of attitudes. They are trained to control hardware and not software.</p>
response	<p>Noted.</p> <p>The training of instructors as regards CRM is not to be regulated by the present rulemaking task (see paragraph (a) of AMC3 ORO.FC.115 of the NPA).</p>
comment	<p>308 <span style="float: right;">comment by: IATA (Dragos Munteanu)</span></p> <p><b>AMC1 ORO.FC.115 sub para (b)</b></p> <p>There is no safety explanation in the NPA as to why more initial training is required (how did</p>



EASA identified that 24 hours is the right amount of hours instead of 16 as previously regulated (2 days)). The increase in the number of hours should be justified on safety grounds.

Many operators have very successful initial training programs according to the present rules and they should not be forced to change their training concepts.

response

Noted.

Please refer to the discussion on minimum training times in Chapter 2 of this CRD.

**3. Proposed amendments - 3.1. Draft Acceptable Means of Compliance (AMC) and Guidance Material (GM) (Draft Decisions) - 3.1.2. Air operations — Decision 2014/017/R (Part-ORO) - Subpart FC - AMC1 ORO.FC.115 Crew resource management (CRM) training - (f) Training elements**

p. 23-25

comment

comment by:

56

DLH

367

AEA

**1. (8)(f)(1)**

It should be made clear, that training on automation only can take place in FSTD, because it is type specific.

**2. (iii)**

Training with real surprise is not possible, because there has to be a standardized syllabus for all trainings, which will be known among FC eventually after commencement of the training.

**3. (8)(f)(3)**

Resilience is part of a persons personality, which is developed during childhood (see e.g. "Resilienz" by Christina Berndt and other publications). Personality is not influenceable during CRM-training. Therefore this topic should be deleted completely in the AMC/GM.

The topics in table 1 (training syllabus) should stay as generic as possible, to give operators the chance to adapt their trainings to actual practical and scientific insight. For example if resilience was really needed, it could be covered by "stressmanagement" anyhow.

**4. (4)**

Training with real surprise is not possible, because there has to be a standardized syllabus for all trainings, which will be known among FC eventually after commencement of the training. It is not desired for operators to have trainers to invent their own way of surprising participants.



response

Partially accepted.

**On No 1 (paragraph (f)(1) of AMC1 ORO.FC.115):**

Partially accepted. The Agency agrees in principle. However, it might be useful to explain some basic principles to trainees in a classroom environment. Therefore, the Agency is of the opinion that the provision of paragraph (f)(1)(iii) in the NPA is sufficient: 'The training should include practical training with automation surprises of different origin (system- and pilot-induced) to be provided, whenever practicable, in FSTDs.'

**On No 2 (paragraph (f)(1)(iii) of AMC1 ORO.FC.115):**

Partially accepted. The Agency agrees in principle. The intention of the text is to express that not only standard situations should be trained, but also situations which are unexpected and unusual, which in this respect are a challenge to the trainee.

**On No 3 (paragraph (f)(3) of AMC1 ORO.FC.115):**

Not accepted. Please refer to the discussion on resilience development in Chapter 2 of this CRD.

**On No 4 (paragraph (f)(4) of AMC1 ORO.FC.115):**

Partially accepted. Please refer to the discussion on the surprise and startle effect in Chapter 2 of this CRD.

comment

261

comment by: ATF - Awareness Training Fakoussa

**(3) Resilience development**

As mentioned before: PRM personal resource management includes automatically resilience as this is a very individual personal ability. To use the term resilience in connection with CRM just adds more words but will not make a team any more resilient.

Any crew is as resilient as the weakest member of that crew. Training all crew members to be personally more resilient produces automatically a resilient team.

Mental flexibility cannot be trained in a CRM course in the long view. Just like a check flight gives you a momentary glimpse of the crews performance. But the progress cannot be seen in a moment. So to train mental flexibility longlasting requires a different strategy.

It is not possible to reflect on my judgement and to adjust it. I could do that with the help of a coach but not with a normal FI/TRI. They are not psychologists.

A prejudice is called prejudice because it appears in microseconds and is not under the control of our conscious brain. That works within whole seconds and thus is too slow!!

You cannot mitigate a frozen behaviour. Either you are frozen, than that is it. Or you have not yet reached that frozen stage and therefore can mitigate your re/actions.

An inappropriate hesitation is a necessity if I have not a plan or reaction pre-thought!

This whole paragraph should be completely deleted. It is full of illogical statements and causes more misunderstandings than gives advice or direction.



response Not accepted.  
Please refer to the discussion on resilience development in Chapter 2 of this CRD.

comment 262 comment by: ATF - Awareness Training Fakoussa

surprise and startle effect

This effect is already part of stress and stress coping and is included in the CRM table. On the basis of PRM appropriate techniques are part of the course. Why again more paragraphs if there is nothing new in it?

Surprise is a question of awareness and startle is a question of not understanding.

Both words are being already part of existing CRM training. It is the quality of the existing CRM training that seems to force EASA to invent new words to cover the lack of quality training.

acquisition and maintenance of adequate automatic behavioural responses is part of PRM and is called mental training. CRM does not work with mental abilities. CRM concentrates on cognitive abilities and thus misses the point of where awareness is coming from.

If EASA switches to PRM you can delete the whole paragraph. The normal average CRM trainer does not know the difference anyway. The longer he has been a CRM trainer the older his knowledge.....

response Not accepted.  
Please refer to the discussion on the surprise and startle effect in Chapter 2 of this CRD.

comment 263 comment by: ATF - Awareness Training Fakoussa

The operators safety culture depends to a great extent on the CEOs and financial directors safety "thinking". Therefore they should be part of the CRM training and can discuss with their crews the companies safety culture from the different perspectives.

response Noted.  
It is outside the scope of the present rulemaking task to include a provision for the high level management to attend CRM trainings. On the other hand, the Agency introduced in Table 1 of GM3 ORO.FC.115 the following provisions: 'Ensure the organisation is ready for CRM training' and 'Establish an environment where CRM training is positively recognised'. A precondition for both provisions is a positive attitude of the senior management towards CRM training.



comment 309 comment by: IATA (Dragos Munteanu)

**AMC1 ORO.FC.115 sub para (f)(1)(iii)**

Training with real surprise is difficult to achieve, since there has to be a standardized syllabus for all training programs, and these will become transparent among Flight Crews.

response Partially accepted.

The Agency agrees in principle. The intention of the text is to express that not only standard situations should be trained, but also situations which are unexpected and unusual, which in this respect are a challenge to the trainee.

comment 310 comment by: IATA (Dragos Munteanu)

**AMC1 ORO.FC.115 sub para (f)(3)**

We consider this point to be very specific. The topics in table 1 (training syllabus) should be as generic as possible, to give operators the chance to adapt their training programs to actual practical and scientific insight.

response Noted.

Please refer to the discussion on resilience development in Chapter 2 of this CRD.

comment 311 comment by: IATA (Dragos Munteanu)

**AMC1 ORO.FC.115 sub para (f)(4)**

Training with real surprise is difficult to achieve, since there has to be a standardized syllabus for all training programs, and these will become transparent among Flight Crews. It is not desirable for operators to have trainers to invent their own way of surprising participants.

Also the term "crisis management" in the CRM context has to be clarified - we consider that "emergency/abnormal situation management" would be more appropriate.

response Partially accepted.

Please refer to the discussion on the surprise and startle effect in Chapter 2 of this CRD. Following the proposal, the Agency amended the text.



**Subpart FC - AMC1 ORO.FC.115 Crew resource management (CRM) training - (g) CRM training syllabus**

comment 57

comment by: *DLH*

Table 1

Automation and philosophy on the use of automation / Specific type-related differences:

This does only make sense for recurrent training in FSTD.

Resilience development:

Resilience is part of a person's personality, which is developed during childhood (see e.g. "Resilienz" by Christina Berndt and other publications). Personality is not influenceable during CRM-training. Therefore this topic should be deleted completely in the AMC/GM.

Surprise and startle effect:

Training with real surprise is not possible, because there has to be a standardized syllabus for all trainings, which will be known among FC eventually after commencement of the training. It is not desired for operators to have trainers to invent their own way of surprising participants.

response Partially accepted.

Please refer to the responses to comment No 56.

comment 193

comment by: *FPA SSC*

Original text:

CRM training when type course for common type rated a/c. The chart does not take into account training inside a common type rated a/c family.

Proposed text:

Training between different generation aircraft must always require in-depth crm-training to flight crew. Even though aircraft might have a common type rating.

Comments:

The proposal does not take into account training inside the same type rated family. E.g. Boeing 777/787 or Airbus 330/350. These combinations include two a/c that might have common type rating but are different generation a/c. This has a huge impact on CRM-aspects inside the cockpit. Due to economical reasons, the operators WILL go with minimum training if granted the possibility.



response Not accepted.

The Agency is of the opinion that the issue is covered by paragraph (c) of AMC1 ORO.FC.115 of the NPA on ‘Operator conversion course CRM training’ and subsequently by the training elements listed in Table 1 of AMC1 ORO.FC.115.

comment 264

comment by: ATF - Awareness Training Fakoussa

The term acquisition can be used for knowledge and skills only. A consolidation of knowledge and skills is only possible through repetition. The times given for that (once a year) is too little, to be called repetition. Usually after 3 years repetition of the same subject that will lead to a consolidation. To change an attitude requires the motivation to do so. It is an individual process of personal change, that can be disturbed or encouraged by the group.

I suggest therefore:

‘In-depth’ means training that should be interactive in style taking full advantage of group discussions, team task analysis, team task simulation, etc.,

for the acquisition or consolidation of knowledge and skills. **Motivational presentations and moderated discussions should be used as incentive to reflect and change personal attitudes.**

The CRM training elements should be tailored to the specific needs **of the group** and the training phase being undertaken.

response Partially accepted.

Although agreeing in principle, the Agency came to the conclusion that the text should be kept simple and directed to the practical approach. This means that scientific knowledge might have to be simplified. The proposed additional text concerning the change of personal attitude might be correct; however, it is expected that such additional text may cause confusion to the persons who have to develop training plans. The additional term ‘of the group’ cannot not be added since it is not always given that a group is trained.

comment 265

comment by: ATF - Awareness Training Fakoussa

Attachment [#2](#)

Basically the table is too detailed and confusing for instructors that become after a weekend course certified CRM Trainers. I suggest here again to switch to PRM-personal resource management. The term PRM brings to mind that the individual is responsible and that is ME and I cannot shift responsibility to anybody else even not to the “crew”. **I have attached for discussion** a completely new table based on PRM. This table is generic in style and therefore



it is usable for the CEO as well as for FC , CC, TC and also secretary's and any other ground personnel.

Also it is impossible to go in a beginners course straight in depth. In an initial course participants hearing the first time about communication models and leadership, cannot grasp the message, reflect it, start with self-critique and change their attitude.

The ways a brain can learn plus my personal preferred way of learning, requires at first an overview. With the repetition I can change to familiarization, with the next repetition I can switch to knowledge acquisition and than I can go in depth. Any other way to press and squeeze as fast as possible as many as possible data into the short term memory is useless and has been tried now for more than 20 years without success. This suggested different learning method requires a lot more of the instructor than what has been accepted so far by the NAAs to certify a "trainer". Unless we have top quality instructors/trainers being able to produce a top quality programme we will not have top quality PRM. That will result in more complaints about useless courses that have had no effect.

But if EASA insists on the presented table, here are my comments:

HF in aviation is included in HPL and TEM. Listed like that without showing the connection of the subjects might be confusing.

Suggestion:

General instructions on

CRM principles and

objectives;

General instruction of

Human factors in aviation

Including relevant HPL

And TEM objectives

The amount of objectives in HPL/TEM cannot be covered in depth anyway in the given time. Therefore the instructor has to select the objectives according to group and operator needs.

That is why the "general instruction" .... would make sense.

The instructor/trainer might have personality awareness, but we are looking for personal awareness. The sequence of subjects is not logical. You cannot manage stress, but you can learn how to cope with stressful situations.

Suggestion:

Personality -

information acquisition and processing,

attitudes and behaviour,

situational awareness,

human error and reliability,

self-assessment and self-critique,

ways of assertiveness



individual stress and stress coping techniques

fatigue and vigilance techniques

entire crew:

The sequence is confusing. The basis for most subjects is communication. It is paramount for all other objectives.

Suggestion:

Effective communication and coordination - Basics;

Cultural differences of communication and leadership

Leadership, cooperation, synergy, delegation,

Shared situation awareness, shared information;

decision-making and execution;

Workload management;

Resilience as well as startle effect are very individual reactions and have nothing to do with crews. If EASA insists on keeping it here, use the terms as in "individual crew member" :

Resilience development; is stress coping technique

Surprise and startle effect; is stress coping technique

It is useless to keep this words, resilience and startle eff. , just because they were introduced by accident investigators that are not necessary familiar with PRM, personal resource management.

What is the difference between the operators and the companies culture? If we introduce company resource management it would make sense, but at the moment?

Suggestion:

safety culture of operator and/or company??

organisational factors,

operational factors,

standard operating procedures (SOPs);

Effective communication and coordination with any other personnel

response

Not accepted.

First of all, the Agency is of the opinion that Table 1 in paragraph (g) of AMC1 ORO.FC.115 is a useful tool to list the training elements. While the Agency in principle acknowledges the proposals made, one has to consider that Table 1, which is based on the existing provisions, has been carefully developed further, while considering the input received during the drafting of the NPA. In this process, a careful balance between the different positions and opinions had to be considered. Consequently, the Agency decided not to introduce the substantial changes, as proposed by the commentator. In this context, one has to consider that the Agency also tried streamlining the training elements for flight crew with the ones for cabin crew.



comment 368

comment by: AEA

**AMC1 ORO.FC.115 sub para (g) Table 1 'Flight Crew CRM Training'**

Comment:

For most CRM training elements of the initial operator's CRM training it is preferable to be trained at a later stage when the flight crew member has gained operational experience. This will increase the learning effect.

Note: For multi-pilot operations, the pilot has already had an ATO MCC course where CRM elements are covered.

The CRM elements "Automation and philosophy on the use of automation", "Specific type-related Differences" and "Monitoring and intervention" (all relevant to the flight crew) do not have to be covered in the initial operator's CRM training as these elements are already covered in-depth in the operator's conversion course.

This does only make sense for recurrent training in FSTD.

Resilience development:

Resilience is part of a person's personality, which is developed during childhood (see e.g. "Resilienz" by Christina Brendt and other publications). Personality is not influencable during CRM training. Therefore, this topic should be deleted completely in the AMC/GM.

Surprise and startle effect:

Training with real surprise is not possible, because there has to be a standardized syllabus for all trainings, which will be known among FC eventually after commencement of the training. It is not desired for operators to have trainers to invent their own way of surprising participants.

response Partially accepted.

ORO.FC.215(a) prescribes that the flight crew member shall have completed an initial CRM training course before commencing unsupervised line flying.

The Agency is of the opinion that the training elements 'Automation and philosophy on the use of automation', 'Specific type-related differences' and 'Monitoring and intervention', which are covered in depth in the operator's conversion course, should also be covered in the initial operator's CRM training.

Concerning resilience development and surprise and startle effect, please refer to the discussion in Chapter 2 of this CRD.

**3. Proposed amendments - 3.1. Draft Acceptable Means of Compliance (AMC) and Guidance Material (GM) (Draft Decisions) - 3.1.2. Air operations — Decision 2014/017/R (Part-ORO) - Subpart FC - AMC1 ORO.FC.115 Crew resource management (CRM) training - (h) Assessment of CRM skills**

p. 27-28



comment 9 comment by: *Stefano Cignoni*

(iii) **significant reduction in safety margins**: it's too general it could be interpreted in many ways.

It could led to different subjective judgement according to who is evaluating pilot performance.

response Noted.

Please refer to the discussion on assessment in Chapter 2 of this CRD.

comment 14 comment by: *Alitalia*

we found the statement ..significant reduction in safety margins.. too generic and leaving too much personal interpretation during a CRM skill assessment affecting the relative evaluation.

response Noted.

Please refer to the discussion on assessment in Chapter 2 of this CRD.

comment 20 comment by: *Federal Office of Civil Aviation FOCA*

AMC1 ORO.FC.115 (h)(5): In line with our comment to the question regarding the inclusion of flight crew representatives (page 14 of this NPA) FOCA suggest to add the following statement: "In order to enhance the effectiveness of the programme, the assessment methodology should, where possible, be agreed with flight crew representatives".

response Noted.

Please refer to the discussion on assessment in Chapter 2 of this CRD.

comment 58 comment by: *DLH*

(h)(3) Replace "may be given" with "should be given". Otherwise unions and representatives could decline the feedback process.

(5) To give a "detailed description of the CRM methodology including terminology" is very difficult to understand. What is the purpose of the paragraph, since there's also (6) and there always have to be a training syllabus, which has to have the approval of the authority.



response Not accepted.  
Please refer to the response to comment No 369 (covered under Nos 3 and 4).

comment comment by:

122 A.L.P.L. - Association Luxembourgeoise des Pilotes de Ligne a.s.b.l.

152 Nuno Queiroz

384 SNPL France ALPA

(text deleted)

~~The assessment of CRM should not include any testing or checking of the flight crew or flight crew member's CRM performance~~

THIS PARAGRAPH MUST BE REINSTATED:

***The assessment of CRM should not include any testing or checking of the flight crew or flight crew member's CRM performance***<sup>101</sup>

**AMC1 ORO.FC.115 (h)**

We strongly disagree with the deletion of the following paragraph: "The assessment of CRM should not include any testing or checking of the flight crew or flight crew member's CRM performance" AMC1 ORO.FC.115&215 (h);

CRM training is not an easy subject. It is hard to quantify, there is often some confusion on definitions and meanings and not at the least, it is prone to subjective assessments. It is obviously difficult for anyone to accept an evaluation which is subjective, rather than based on clearly defined criteria, concepts and terms. So the highest care must be taken that this does not happen when the license of a pilot is at stake during a check ride.

This is not to say that there cannot be improvements flagged up to a pilot as regard to CRM, but CRM assessments – which will always contain subjective elements – should not be check-relevant, i.e. not lead to a failure during a check ride.

This was an essential element built into the current system and must be maintained.

response Not accepted.

There must be a misunderstanding. Paragraph (h) of AMC1 ORO.FC.115&215 (the paragraph on assessment being valid at present) does not contain the statement: 'The assessment of CRM should not include any testing or checking of the flight crew or flight crew member's CRM performance.'

comment comment by:

<sup>101</sup> The text above is only included in the comment from SNPL FRANCE ALPA.



124	A.L.P.L. - Association Luxembourgeoise des Pilotes de Ligne a.s.b.l.
153	Nuno Queiroz
386	SNPL France ALPA
<p>(...) assessments should include behavior that contributes to a significant reduction in safety margins</p> <p>THE <u>CURRENT WORDING</u> IS TO BE <u>MAINTAINED</u> (INSTEAD OF THE NEWLY PROPOSED ONE):</p> <p><b>(...) assessments should include behavior that contributes to a technical failure, such technical failure being errors leading to an event that requires debriefing by the person conducting the line check.</b><sup>102</sup></p> <p><b>AMC1 ORO.FC.115(h) (6) (iii)</b></p> <p>The current system based on the wording “assessments should include behavior that contributes to a technical failure, such technical failure being errors leading to an event that requires debriefing by the person conducting the line check” has worked and continues to work properly. Therefore there is no need to change it. ‘If not broken, don’t fix it’.</p> <p>In addition the current proposal to amend it to “assessments should include behavior that contributes to a reduction in safety margins, leading to an event that requires debriefing by the person conducting the test or check” is highly problematic and would have negative consequences</p> <p>First of all it detaches the CRM assessment from a clearly understood concept– a ‘technical failure’; It replaces ‘technical failure’ with a very subjective “reduction in safety margins”.</p> <p>This “reduction in safety margins” is undefined and wide open for interpretation. Therefore, the newly proposed text makes the CRM evaluation subjective and hence difficult to implement, to apply uniformly and without opening to door to contested interpretations and potential abuse.</p> <p>Hence, the current wording is to be maintained.</p>	
response	<p>Not accepted.</p> <p>Please refer to the discussion on assessment in Chapter 2 of this CRD.</p>

comment	<p>126 comment by: A.L.P.L. - Association Luxembourgeoise des Pilotes de Ligne a.s.b.l.</p> <p><b>AMC1 ORO.FC.115(h)</b></p> <p>We strongly disagree with the deletion of the paragraph “In order to enhance the effectiveness of the program, this methodology should, where possible, be agreed with flight crew representatives.” AMC1 ORO.FC.115&amp;215 (h).</p> <p>The proposal to exclude Flight Crew Representatives, i.e., Pilots, from the process of developing an effective method of assessment of CRM skills is a major step backwards in the concepts of Safety and Just Cultures, especially combined with the requirement to assess</p>
---------	--

<sup>102</sup> The text above is only included in the comment from SNPL FRANCE ALPA.



pilots in CRM skills regardless of the outcome of the operation.

The combination of a subjective assessment (based on an undefined term of 'reduction in safety margins' which is open to subjective interpretations) and the exclusion of pilots from the whole process in which the methodology is developed is in our view the worst proposal of this NPA.

The provision that "methodology, should, where possible, be agreed with flight crew representatives" was a key requirement when CRM was introduced.

All stakeholders were very much aware that a successful CRM introduction would only be possible if there was enough trust in the system. In order to guarantee that trust the requirement to involve flight crew representatives had been included on purpose. This requirement has shown its benefit since.

There are some who argue that CRM is now well established and thus such a requirement might no longer be necessary. Although there are indeed airlines where CRM is nowadays uncontested, this regrettably is not the case everywhere. Even in well established companies, the safety culture and Just Culture environment are not always as developed as they should be. In such an environment, this provision remains key to ensure CRM is widely accepted, is seen as a safety tool and is not abused to 'get rid of the rotten apples'. This provision is still very necessary to build and keep the trust in the CRM system.

Also, new start-ups that cannot bank on a long-built trust and an established mature safety culture within the company. They will have to go through the process from scratch and the provision will therefore be necessary.

Furthermore, we do not see a contradiction with the fact that "State laws regulate agreements between company owners and employee representatives". The requirement to include flight crew representatives in the process of developing an effective method of assessment of CRM skills, is not an industrial issue but a technical one, which is necessary to ensure CRM is understood and used as a safety tool and benefits from the trust of all involved.

Finally, in companies where the current system of consulting flight crew representatives works well and has shown its benefits, the retention of the current text will not entail any disadvantages (while the deletion might well have negative consequences over time). In companies where the system does not work properly, or in newly set-up companies, the retention of this wording will make a significant positive difference.

For these reasons we strongly recommend to leave this essential requirement in the text. If we pull out the guarantee that ensures trust, we risk damaging all the benefits that CRM brings to the aviation safety system.

response

Noted.

Please refer to the discussion on assessment in Chapter 2 of this CRD.

comment

191

comment by: *Cathay Pacific*

Delete 'Threat and Error Management' from training elements on the grounds that it does



not represent any skills or knowledge not already covered by pre-existing concepts.

response

Not accepted.

During the establishment of the draft provisions, it was discussed in depth whether or not to include TEM as a training requirement. The Agency’s Rulemaking Group finally agreed to include TEM under ‘General principles’ (see e.g. Table 1 of AMC1 ORO.FC.115), and then to leave it to the operator how to implement TEM in its training map. The Agency supports this agreement.

comment

194

comment by: FPA SSC

Original text:

(h) Assessment of CRM skills

(1) Assessment of CRM skills is the process of observing, recording, interpreting and debriefing crews and crew member’s performance using a validated or generally accepted methodology in the context of the overall performance.

Proposed text:

(h) Assessment of CRM skills

(1) Assessment of CRM skills is the process of observing, recording, interpreting and debriefing crews and crew member’s performance by a CRM assessment qualified examiner using a validated or generally accepted methodology in the context of the overall performance.

Comments:

The assessment must be made by trained and qualified examiners who have been specifically trained to evaluate CRM. E.g. simulator examiner experience alone does not constitute for "valid training". The term "validated or generally accepted methodology" is ambiguous. Naturally, there must be a validated methodology presented before any assessment can be made.

response

Not accepted.

The assessment has to be done by a CRM trainer. The Agency deliberately avoids the term ‘examiner’. In addition, the term ‘by a CRM assessment qualified examiner’ as such is ambiguous. Using this term means that the qualification of such a person needs to be specified. This, in the opinion of the Agency, would complicate the scheme in an unnecessary manner. Therefore, the Agency decided to make reference rather to the methodology than to a specific group of persons.



comment	<p>266 <span style="float: right;">comment by: ATF - Awareness Training Fakoussa</span></p> <p><b>1. ...include debriefing the crew and the individual crew member</b></p> <p>Better: ...include NoTEC based debriefing for the crew and.....</p> <p><b>2. Prior to the introduction of CRM skills assessment, a detailed description of the CRM methodology including terminology used for the assessment should be published in the operations manual.</b></p> <p>Better: Prior to the introduction of CRM skills assessment, during a PRM recurrent course, the CRM methodology including terminology used for the assessment should be presented and discussed to adapt the terminology to the type of operation and thereafter a short overview should be published in the operations manual.</p>
response	<p>Not accepted.</p> <p><b>On No 1:</b> According to paragraph (h)(2) of AMC1 ORO.FC.115 of the NPA, NOTECHS is only one of the methods which can be used. Therefore, NOTECHS should not be explicitly mentioned here.</p> <p><b>On No 2:</b> The Agency decided to allow for a certain level of flexibility for the operator. Therefore, the text will not be expanded as proposed by the commentator.</p>
comment	<p>267 <span style="float: right;">comment by: ATF - Awareness Training Fakoussa</span></p> <p>(7) Operators should establish procedures, including additional training, to be applied in the event that flight crew members do not achieve or maintain the required CRM standards.</p> <p>This is a contradiction: a person has not shown the required standards of NON TECHNICAL SKILLS and gets an additional training. In most cases he will fly another useless sim or flight check session.</p> <p>Specify: what kind of additional training is required for lack of CRM/PRM skills?</p> <p>I know that is a very unpleasant question. But what do you do with an undisciplined person (not following SOP) , an aggressive person (shouting at...), a very shy person (not assertive....) etc. ?</p> <p>From my experience, personal coaching has helped in these cases.</p> <p>That would be a useful and effective way of helping crew members to achieve the required NoTECs standard. Perhaps EASA can just give a hint into that direction, nothing compulsory.</p>
response	<p>Noted.</p> <p>The Agency deliberately does not specify any further the procedures to be applied. Instead, it</p>



is left to the operator to decide on the appropriate measures. These can be additional training sessions or, as the commentator suggested, personal coaching.

comment

285

comment by: *Steve DEVERALL*

(h)(2) implies that a method of assessment has to be "generally" accepted to be considered suitable, i.e. used by a majority of operators. However, if an operator's own method of assessment has been approved by their NAA and is contained in their Operations Manual, then it is possible that this may be unique, not general. This should not prevent an operator continuing to use their validated system, nor introduce a validated system particular to their management system. This should include the ICAO Doc 9995 EBT Core Competencies.

Request reword (h)(2) to "A validated method of assessment should be used. The non-technical skills (NOTECHS) framework or ICAO EBT Core Competencies are such methods."

response

Not accepted.

There are no fixed criteria for a method being 'validated and generally accepted'. The Agency deliberately decided not to further specify any such criteria. It is always the operator which should coordinate with the competent authority on what can be accepted. The competent authority, when approving the method, should decide what is 'validated and generally accepted'. However, based on the comments received and after further discussion, the Agency decided:

- to delete paragraph (h)(2) of the NPA completely (therefore, no mention of any method, including NOTECHS, in the AMC);
- to amend the phrase 'validated and generally accepted' back to the original wording 'accepted' in paragraph (h)(1).

Please refer also to the discussion on this subject in Chapter 2 of this CRD.

comment

312

comment by: *IATA (Dragos Munteanu)*

**AMC1 ORO.FC.115 sub para (h)(1)**

We consider EASA should clarify the meaning of the "validation" and the "general accepted methodology".

response

Noted.

There are no fixed criteria for a method being 'validated and generally accepted'. The Agency deliberately decided not to further specify any such criteria. It is always the operator which should coordinate with the competent authority on what can be accepted. The competent authority, when approving the method, should decide what is 'validated and generally accepted'. Please refer also to the discussion on this subject in Chapter 2 of this CRD.



comment 313 comment by: IATA (Dragos Munteanu)

**AMC1 ORO.FC.115 sub para (h)(2)**

This is a repetition of para (h)(1). NOTECHS is an example of a validated and accepted method (but not the only one) and should therefore be transferred to a GM. The Operator should select the most appropriate method based on its assessment.

response Partially accepted.

Based on the input received during the drafting of the NPA, the Agency decided to mention NOTECHS in the AMC, and only this method, to have a link to GM5 ORO.FC.115, where NOTECHS is described in general terms. However, based on the comments received and after further discussion, the Agency decided not to mention NOTECHS in the AMC.

It is always the operator which should coordinate with the competent authority on what can be accepted. The competent authority, when approving the method, should decide what is 'validated and generally accepted'. However, based on the comments received and after further discussion, the Agency decided to amend the phrase 'validated and generally accepted' back to the original wording 'accepted' in paragraph (h)(1), while paragraph (h)(2) of the NPA has been deleted.

Please refer also to the discussion on this subject in Chapter 2 of this CRD.

comment 338 comment by: Austrian/Tyrolean Betriebsrat Bord

This change is not based on evidence, the current wording should be retained.

CRM is a "soft skill" that is hard, if not impossible to measure to a degree that allows it to be used to pass or fail a check. Pilots would be faced with an evaluation that is subjective and therefore hard to accept.

Pilots should be informed about CRM deficiencies and areas of possible improvement and receive training accordingly.

response Noted.

Please refer to the discussion on assessment in Chapter 2 of this CRD.

comment 340 comment by: Austrian/Tyrolean Betriebsrat Bord

ad (h)(6)(iii): "a significant reduction in safety margins" is not a clearly defined term and subject to interpretation. What amounts to a significant reduction will inevitably differ from examiner to examiner, resulting in pilots with comparable performance being failed by one



	and passed by the other. There is no evidence for the current rule to require a fix/update.
response	Noted. Please refer to the discussion on assessment in Chapter 2 of this CRD.

comment	341 <span style="float: right;">comment by: <i>Austrian/Tyrolean Betriebsrat Bord</i></span>
	ad (h)(6)(iii): An undefined threshold for acceptable performance opens the system to abuse.
response	Noted. Please refer to the discussion on assessment in Chapter 2 of this CRD.

comment	369 <span style="float: right;">comment by: <i>AEA</i></span>
	<p><b>1. AMC1 ORO.FC.115 sub para (h)(1)</b> Comment: "validated" is vague. Please clarify.</p> <p><b>2. AMC1 ORO.FC.115 sub para (h)(2)</b> Comment: delete para (h)(2). This is a repetition of para (h)(1). NOTECHS is an example of a validated and accepted method (but not the only one) and should therefore be transferred to a GM.</p> <p><b>3. AMC1 ORO.FC.115 sub para (h)(3)</b> Replace "may be given" with "should be given". Otherwise unions and representatives could decline the feedback process.</p> <p><b>4. AMC1 ORO.FC.115 sub para (h)(5)</b> To give a "detailed description of the CRM methodology including terminology" is very difficult to understand. What is the purpose of the paragraph, since there's also (6) and there always have to be a training syllabus, which has to have the approval of the authority.</p>
response	Partially accepted. <b>On No 1 (paragraph (h)(1) of AMC1 ORO.FC.115):</b> Noted. Please refer to the discussion in Chapter 2 of this CRD. <b>On No 2 (paragraph (h)(2) of AMC1 ORO.FC.115):</b> Accepted. Paragraph (h)(2) has been deleted. Please refer also to the discussion on this subject in Chapter 2 of this CRD.



**On No 3 (paragraph (h)(3) of AMC1 ORO.FC.115):**

Not accepted. The Agency decided to keep the wording 'may be given' as regards feedback in the non-operational environment. The reason is that giving feedback should be seen as a possibility, not as a necessity.

**On No 4 (paragraph (h)(5) of AMC1 ORO.FC.115):**

Noted. The Agency is of the opinion that paragraph (h)(5) of AMC1 ORO.FC.115 of the NPA is important as a measure of documentation, e.g. to avoid arbitrariness during the assessment, and to be consulted by both the trainer and the trainee.

comment 370

comment by: *European HF Advisory group*

(h) (2) What would be seen as a validated method for the development of a behavioural marker system similar to NOTECHs.

How would an Operator demonstrate their methodology is validated

response Noted.

There are no fixed criteria for a method being 'validated and generally accepted'. The Agency deliberately decided not to further specify any such criteria. It is always the operator which should coordinate with the competent authority on what can be accepted. The competent authority, when approving the method, should decide what is 'validated and generally accepted' on a case-by-case basis. However, please refer also to the discussion on this subject in Chapter 2 of this CRD, where it is outlined that:

- paragraph (h)(2) of the NPA is deleted completely;
- the phrase 'validated and generally accepted' is replaced by the original wording 'accepted' in paragraph (h)(1).

**3. Proposed amendments - 3.1. Draft Acceptable Means of Compliance (AMC) and Guidance Material (GM) (Draft Decisions) - 3.1.2. Air operations — Decision 2014/017/R (Part-ORO) - Subpart FC - AMC2 ORO.FC.115 Crew resource management (CRM) training**

p. 28

comment 268

comment by: *ATF - Awareness Training Fakoussa*

**1. (ii) for other-than complex motor-powered aircraft determined by the operator, based on the aircraft type and the complexity of the operation.**

In both cases, complex and non complex, these pilots can endanger flight safety.

Therefore it does not make sense to split the requirement. In both cases 8h!



**2. (iv) resilience development; and (v) surprise and startle effect; and**

As mentioned before, these terms are new fashion and can be exchanged as in the CRM table as:

Resilience development; is stress coping technique

Surprise and startle effect; is stress coping technique

Better:

(iv) individual stress, stress coping techniques for mind and body;

And skip (v) completely

**3. (4) Computer-based training**

This is certainly the cheapest way and the most ineffective way. So many useless rules cost the aviation industry a lot of money and have no influence on safety. CRM/PRM is the main killer and suddenly we start to save money.

NO stand alone CBT!!!

response

Not accepted.

**On No 1 (paragraph (b)(2)(ii) of AMC2 ORO.FC.115):**

Not accepted. The Agency decided to consider proportionality issues and, therefore, to introduce a 'lighter' scheme for 'lighter' aircraft, following the Agency's General Aviation Road Map.

**On No 2 (paragraph (b)(3) of AMC2 ORO.FC.115):**

Not accepted. Please refer to the discussion on resilience development and on the surprise and startle effect in Chapter 2 of this CRD.

**On No 3 (paragraph (b)(4) of AMC2 ORO.FC.115):**

Not accepted. Please refer to the discussion on computer-based training in Chapter 2 of this CRD.

**3. Proposed amendments - 3.1. Draft Acceptable Means of Compliance (AMC) and Guidance Material (GM) (Draft Decisions) - 3.1.2. Air operations — Decision 2014/017/R (Part-ORO) - Subpart FC - AMC3 ORO.FC.115 Crew resource management (CRM) training**

p. 28-31

comment

2

comment by: NFLC, Cranfield University, UK

AMC3 ORO.FC.115

It is not clear how line training fits into these rules. It is training carried out in an operational environment but is typically not carried out by a pilot with an instructor certificate. The training requirements would seem excessive for a Line Training Captain, a CRMI(Line) in CAA STD DOC 29 terms. So please clarify how the CRMI(Line) fits into this paragraph.



response Noted.

AMC3 ORO.FC.115 deliberately does not cover line training captain. Instead, the AMC makes it clear that the provisions are applicable only to CRM trainers responsible for classroom CRM training (paragraph (a)(1) of AMC3 ORO.FC.115).

comment 3 comment by: *NFLC, Cranfield University, UK*

AMC3 ORO.FC.115 para d-f

The requirements for a flight crew CRM trainer examiner are excessive for a CRMI(Line) in CAA STD DOC 29 terms, especially for small operators. Please clarify that these paragraphs do not apply to a CRMI(Line).

response Noted.

One has to understand that the system of the UK CAA is replaced by the European Union system. In the European Union system a 'CRMI (Line)' does not exist. Instead, one has to distinguish between a CRM trainer, for whom the provisions are laid down in AMC3 ORO.FC.115, and an instructor, holding a licence in accordance with Regulation (EU) No 1178/2011.

comment 5 comment by: *Stefano Cignoni*

I have some doubt about the non-flight crew CRM Trainers (3iii) because I don't think he/she will have a deep cultural understanding of flight operation environment.

response Noted.

Please refer to the discussion on the subject in Chapter 2 of this CRD.

comment 11 comment by: *Stefano Cignoni*

**(2) A flight crew CRM trainer, in order to be suitably qualified, should:**

**(i) have adequate knowledge of the relevant flight operations, preferably gained through current experience as flight crew member;**

It seems that a Flight Crew CRM Trainer could be a person different from a Flight Crew. For the Cabin Crew CRM Trainer instead is specified that a CRM Trainer must be a Cabin Crew. (see relative comment)



response

Noted.

Please refer to the discussion on the subject in Chapter 2 of this CRD.

comment

13

comment by: *Stefano Cignoni***(2) A flight crew CRM trainer, in order to be suitably qualified, should:****(i) have adequate knowledge of the relevant flight operations, preferably gained through current experience as flight crew member;**I will change: **(i) have adequate knowledge of the relevant flight operations, preferably gained through current experience as flight crew member;**in : **(i) have appropriate experience of the relevant Flight Operations as a Flight Crew Member.**

response

Not accepted.

Please refer to the discussion on the subject in Chapter 2 of this CRD.

comment

16

comment by: *Alitalia*

Question: why the Cabin Crew CRM Trainer, in order to be suitably qualified, should have appropriate experience as cabin crew member whereas for the Flight Crew CRM Trainer such experience is only preferable?

response

Noted.

Please refer to the discussion on this subject in Chapter 2 of this CRD.

comment

18

comment by: *Alitalia*

The knowledge and the experience in the real operational environment is essential for a CRM trainer not only for his/her teaching but even for his/her reliability.

response

Noted.

Please refer to the discussion on the subject in Chapter 2 of this CRD.



comment 21

comment by: *Federal Office of Civil Aviation FOCA*

AMC3 ORO.FC.115 - Crew resource management (CRM) training:

FOCA considers the function/introduction of the “flight crew CRM trainer examiner” as unnecessary, too prescriptive and burdensome. The required training can be equally provided by experienced CRM trainers who are in a position and qualified to assess “CRM training” provided that they are trained respectively (assessment of applied CRM training and assessment of trainers). Such training can be included in the topic under AMC3 ORO.FC.115 (3)(iv) - assessment, including NOTECHS.

Therefore, we suggest to change AMC3 ORO.FC.115 as follows:

Subtitle “~~AND FLIGHT CREW CRM TRAINER EXAMINER~~” and paragraph (f) to be deleted; paragraphs (a)(1), (a)(2), (d)(2), (e) to be amended:

(a)(1) should be fulfilled by flight crew CRM trainers ~~and flight crew CRM trainer examiners~~ responsible for classroom training, and

(a)(2) are not applicable to instructors (except the provisions under (c)(3) (iv), and (4)), holding a certificate in accordance with Commission Regulation (EU) No 1178/2011, who conduct CRM training in the operational environment.

(d)(2) A flight crew CRM trainer should be assessed by ~~a flight crew CRM trainer examiner~~ an experienced CRM trainer, nominated by the operator, when conducting the first CRM training course. ~~This first assessment should be valid for a period of 3 years.~~

(e) Recency and renewal of qualification as flight crew CRM trainer.

(1) For recency ~~of the 3-year validity period~~, the flight crew CRM trainer should:

(i) conduct at least 2 CRM training events in any 12-month period;

(ii) be assessed within the last 12 months of ~~the a 3-year validity period~~ by ~~a an~~ experienced flight crew CRM trainer ~~examiner~~; nominated by the operator and

(iii) receive a flight crew CRM trainer refresher training within ~~the a 3-year validity period~~.

~~(2) The next 3-year validity period should start at the end of the previous period.~~

~~(3)~~ (2) For renewal, i.e. when a flight crew CRM trainer does not fulfil the provisions of paragraph (1), he/she should, before resuming as flight crew CRM trainer:

(i) comply with the qualification provisions of paragraphs (b) and (d); and

(ii) receive a flight crew CRM trainer refresher training.

(6) The training of flight crew CRM trainers should be conducted by flight crew CRM trainers with a minimum of 3 years’ experience ~~or by flight crew CRM trainer examiners~~. Assistance may be provided by experts in order to address specific areas.

~~(f) Flight crew CRM trainer examiner~~

~~(1) For assessing flight crew CRM trainers, the operator should nominate qualified flight crew CRM trainers to act as flight crew CRM trainer examiners. This personnel should demonstrate recent and relevant knowledge and background, and a minimum of 3 years’ experience as a flight crew CRM trainer.~~



~~(2) An operator which does not have the resources to conduct the assessment as described should employ a contractor. The standard of these external flight crew CRM trainer examiners should be confirmed on a 3 year basis by the operator.~~

~~(3) Continued suitability in the role of a flight crew CRM trainer examiner should be subject to the following provisions:~~

~~(i) The examiner should demonstrate continued compliance with the provisions for a flight crew CRM trainer and should demonstrate capability in that role.~~

~~(ii) The examiner should have conducted at least 2 flight crew CRM trainer assessments in any 12 month period.~~

~~(iii) The examiner should be observed by the operator every 3 years when conducting an assessment of a flight crew CRM trainer.~~

~~(4) For renewal, i.e. when the examiner has not maintained activity in the role, as described in paragraph (3), he/she should comply with the provisions of paragraph (d), before resuming activities as examiner.~~

response

Partially accepted.

After further discussion, the Agency decided to delete completely the draft AMC for CRM trainer examiners. Instead, the responsibility of the operator for the assessment and monitoring of CRM trainers is emphasised in the AMC, and GM is introduced suggesting that the assessment of CRM trainers is conducted by experienced CRM trainers.

comment

42

comment by: *Ryanair*

**(4) The refresher training of flight crew CRM trainers should:**

- (i) be a minimum of 8 hours; and
- (ii) include new methodologies, procedures and lessons learned.

**Comment:**

The requirement of 8 hours here is considered to be excessive for refresher training especially if the instructor has been actively training CRM and active in an operational capacity.

**Proposed text:**

(4) The refresher training of flight crew CRM trainers should be assessed by the Head of Training and should be based on the Instructor's recent instructing experience and operational status and will:



(i) be a minimum of 84 hours; and  
(ii) include new methodologies, procedures and lessons learned, where relevant.

response

Partially accepted.

On (c)(4) of AMC3 ORO.FC.115:

Not accepted. The term ‘Head of training’ should be avoided, since it implies a certain structure within the operator’s organisation. In addition, it is expected that the phrase ‘recent instructing experience and operational status’ would raise concern as being too vague.

On (c)(4)(i) of AMC3 ORO.FC.115:

Noted. Please refer to the discussion on minimum training times in Chapter 2 of this CRD.

On (c)(4)(ii) of AMC3 ORO.FC.115:

Not accepted: The Agency tries to avoid phrases such as ‘where relevant’ in its rules, since these phrases are criticised as being too vague.

comment

59

comment by: DLH

All the hour-requirements (40, 24, 8) may lead to discussions with unions and representatives, how many hours are allowed for one working day. That means it would be better to say 1 working day instead of 8h.

In general minimum training times lead to less experience based training and should be used as little as possible in the regulations.

(3) (iii) (A), (B)

Many Trainers won’t do any initial or combined training, so these characteristics should only be required, if applicable.

response

Noted.

Please refer to the discussion on minimum training times in Chapter 2 of this CRD.

comment

81

comment by: FAA

Page 29. NOTECHS assessment as a required skill for CRM trainers. Page 16 describes NOTECHS as a “possible instrument”, while page 29 seems to make the training of NOTECHS to CRM trainers a mandatory requirement. Clarification may be helpful.

response

Noted.

Following the comment, ‘NOTECHS’ has been deleted from paragraph (c)(3)(iv) of



AMC3 ORO.FC.115.

comment

comment by:

127

*A.L.P.L. - Association Luxembourgeoise des Pilotes de Ligne a.s.b.l.*

156

*Nuno Queiroz*

187

*European Cockpit Association*

251

*Vereinigung Cockpit e. V.*

389

*SNPL FRANCE ALPA*

429

*Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria*

**AMC3 ORO.FC.115 Crew resource management (CRM) training**

**FLIGHT CREW CRM TRAINER AND FLIGHT CREW CRM TRAINER EXAMINER<sup>103</sup>**

We acknowledge that the CRM trainer and examiner's requisites are set, as well as the qualifications of the Overseer State's inspectors.

We believe that in general, it is a positive step towards higher quality and standardization of CRM.

response

Noted.

The support of the Agency's approach is appreciated.

comment

254

comment by: *EUROCONTROL*

**AMC3 ORO.FC.115 Crew Resource Management (CRM) training**

**(b) (2) – Page 29**

EUROCONTROL proposes to add in (b)(2) article a new item (vii), as follows:

(vii) have received adequate training in educational and training methods, including facilitation.

response

Not accepted.

The Agency is of the opinion that the proposed items are, at least indirectly, already included in the listed qualification criteria, such as 'have received training in group facilitation skills', 'have received additional training in the fields of group management, group dynamics and personal awareness', and 'have demonstrated the knowledge, skills and credibility required to train'.

<sup>103</sup> The title is only included in the comment from A.L.P.L. - Association Luxembourgeoise des Pilotes de Ligne a.s.b.l. h., European Cockpit Association and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.



comment 293 comment by: Air Berlin

Why is a refresher course not planned for trainers involved in the operational environment?  
They do CRM training also and assess such skills!

response Noted.

As explained in paragraph (a) of AMC3 ORO.FC.115, the provisions are only applicable to CRM trainers responsible for classroom training, while the provisions for instructors, holding a certificate, are regulated by Regulation (EU) No 1178/2011. In the course of the present rulemaking task, the Agency saw no need to amend the provisions of Regulation (EU) No 1178/2011 for instructors.

comment 314 comment by: IATA (Dragos Munteanu)

**AMC3 ORO.FC.115**

All the hour-requirements (40, 24, 8) may lead to interpretations, how many hours are allowed for one working day. In general minimum training times lead to less experience based training and should be used as little as possible in the regulations.

response Noted.

Please refer to the discussion on minimum training times in Chapter 2 of this CRD.

comment 315 comment by: IATA (Dragos Munteanu)

**AMC3 ORO.FC.115 (b)**

IATA considers that the Operator should be in the best position to select the appropriate qualification for a CRM Flight Crew Trainer.

As the proposal is written the only way to become FC CRM trainer is to be at least a former Flight Crew or an experienced non Flight Crew CRM trainer (grand fathering purposes). As a consequence, it is desirable to give the possibility for new ground staff entrants to gain CRM expertise through specific training and to become Flight Crew CRM trainer or Cabin Crew CRM trainer.

response Noted.

The commentator might have misinterpreted the provisions. In paragraph (b)(2)(i) of AMC3 ORO.FC.115 of the NPA it is stated that a flight crew CRM trainer should 'have adequate knowledge of the relevant flight operations, preferably gained through current experience as flight crew member'. The word 'preferable' permits that a person who is not or



was not a flight crew member and who is not a non-flight crew CRM trainer, becomes a flight crew CRM (classroom) trainer. Please refer also to the discussion on this subject in Chapter 2 of this CRD.

comment 316 comment by: IATA (Dragos Munteanu)

**AMC3 ORO.FC.115 (a) (2) and (c) (2) (ii) and GM2 ORO.FC.115 (b)(2)**

The NPA wording generates difficulties to understand what exactly are the privileges and credits for Instructors certified under the Aircrew regulation.

The AMC3 ORO.FC.115 is contradictory between (a) applicability and (c) (2) (i) and GM2 ORO.FC.115 (b) (2): in (a)(2) it is stated that the provisions described are not applicable to instructors, holding a certificate in accordance with 1178/2011; in (c)(2)(i) there is reference to a waiver on training needs for those who are already instructors, according to 1178/2011.

response Noted.

Please refer to the response to comment No 371 (covered under No 3).

comment 317 comment by: IATA (Dragos Munteanu)

**AMC3 ORO.FC.115 sub para (c)(3)(iv)**

See previous comment on **AMC1 ORO.FC.115 sub para (h)(2)**: delete “including NOTECHS”.

response Accepted.

The text has been amended accordingly.

comment 318 comment by: IATA (Dragos Munteanu)

**AMC3 ORO.FC.115 sub para (e) (f)**

The NPA CRM trainers and Examiners requirements are considered as a “Copy and Paste” from the Aircrew Part FCL Instructor and Examiner requirements.

A typical example is the requirement concerning the minimum of 3 years’ experience for a CRM trainer to be allowed to instruct or to assess a CRM trainer. This is an “Aircrew licensing issue” like those IATA and AEA are struggling against because it is very binding without safety justification and it is not relevant at pedagogical level.

Our position is to focus on the competence of the person instead of the number of hours or years spent (or not) in teaching and we want to insist that this kind of requirement is not in line with the Performance Based Regulation concept that the Agency is supposed to



	<p>promote.</p> <p>As a consequence IATA recommends to replace the 3 years' timescale by a train the trainer course or an assessment of competence of the applicant.</p>
response	<p>Not accepted.</p> <p>Please refer to the response to comment No 371 (covered under No 6).</p>

comment	<p>319 <span style="float: right;">comment by: IATA (Dragos Munteanu)</span></p> <p><b>AMC3 ORO.FC.115 sub para (f)(3)(iii)</b></p> <p>Comment: this is a redundant requirement without added value - we recommend to delete this sub para (f)(3)(iii).</p>
response	<p>Accepted.</p> <p>Please refer to the response to comment No 371 (covered under No 7).</p>

comment	<p>371 <span style="float: right;">comment by: AEA</span></p> <p><b>1. AMC3 ORO.FC.115</b></p> <p>All the hour-requirements (40, 24, 8) may lead to discussions with unions and representatives, how many hours are allowed for one working day. That means it would be better to say 1 working day instead of 8h. In general minimum training times lead to less experience based training and should be used as little as possible in the regulations.</p> <p><b>2. AMC3 ORO.FC.115 (b)</b></p> <p>AEA does not support the fact that the only way to become FC CRM trainer is to be at least a former Flight Crew or an experienced non Flight Crew CRM trainer (grand fathering purposes). As a consequence, it is desirable to give the possibility for new ground staff entrants to gain CRM expertise through specific training and to become Flight Crew CRM trainer or Cabin Crew CRM trainer.</p> <p><b>3. AMC3 ORO.FC.115 (a) (2) and (c) (2) (ii) and GM2 ORO.FC.115 (b)(2)</b></p> <p>The NPA wording generates difficulties to understand what exactly the privileges and credits are for Instructors certified under Aircrew.</p> <p>The AMC3 ORO.FC.115 is contradictory between (a) applicability and (c) (2) (i) and GM2 ORO.FC.115 (b) (2): in (a)(2) it is stated that the provisions described are not applicable to instructors, holding a certificate in accordance with 1178/2011; in (c)(2)(i) there is reference to a waiver on training needs for those who are already instructors, according to 1178/2011.</p> <p><b>4. AMC3 ORO.FC.115 sub para (c)(3)(iii) (A) (B)</b></p> <p>Many Trainers won't do any initial or combined training, so these characteristics should only</p>
---------	--



be required, if applicable.

**5. AMC3 ORO.FC.115 sub para (c)(3)(iv)**

Comment: delete “including NOTECHS”.

NOTECHS is an example of a validated and accepted method (but not the only one). See also the comment to AMC1 ORO.FC.115 sub para (h)(2).

**6. AMC3 ORO.FC.115 sub para (e) (f)**

The NPA CRM trainer tutors and Examiners requirements are considered as a “Copy and Paste” from the Aircrew Part FCL Instructor and Examiner requirements.

A typical example is the requirement concerning the minimum of 3 years’ experience for a CRM trainer to be allowed to instruct or to assess a CRM trainer. This is an “Aircrew licensing issue” like those AEA and IATA are struggling against because it is very binding without safety justification and it is not relevant at pedagogical level.

Our position is to focus on the competence of the tutor instead of the number of hours or years spent (or not) in teaching and we want to insist that this kind of requirement is not in line with the Performance Based Regulation concept that the Agency is supposed to promote.

As a consequence AEA recommends to replace the 3 years’ timescale by a train the trainer course or an assessment of competence of the applicant.

**7. AMC3 ORO.FC.115 sub para (f)(3)(iii)**

Comment: delete this sub para (f)(3)(iii).

This is a superfluous requirement with no added value.

response

Partially accepted.

**On No 1 (AMC3 ORO.FC.115):**

Noted. Please refer to the discussion on minimum training times in Chapter 2 of this CRD.

**On No 2 (paragraph (b) of AMC3 ORO.FC.115):**

Noted. The commentator might have misinterpreted the provisions. In paragraph (b)(2)(i) of AMC3 ORO.FC.115 of the NPA it is stated that a flight crew CRM trainer should ‘have adequate knowledge of the relevant flight operations, preferably gained through current experience as flight crew member’. The word ‘preferable’ permits that a person who is not or was not a flight crew member and who is not a non-flight crew CRM trainer, becomes a flight crew CRM (classroom) trainer. Please refer also to the discussion on the subject in Chapter 2 of this CRD.

**On No 3 (paragraphs (a)(2) and (c)(2)(ii) of AMC3 ORO.FC.115 and paragraph (b)(2) of GM2 ORO.FC.115):**

Noted. The Agency does not see this contradiction. Paragraph (a) explains that AMC3 ORO.FC.115 is applicable to CRM trainers responsible for classroom training, but is not applicable to instructors (qualified according to Regulation (EU) No 1178/2011) who conduct CRM training in the operational environment. The question is what kind of training is needed for an instructor (conducting, among others, also CRM elements in the operational environment) to become a CRM trainer (conducting ‘pure’ CRM training in classroom). The response concerning minimum training time is given in paragraph (c)(2)(i) (in the NPA),



namely that a reduced number of training hours is needed. Paragraph (b) of GM2 ORO.FC.115 of the NPA is simply giving an overview of who does what and, therefore, is also no contradiction.

**On No 4 (paragraphs (c)(3)(iii)(A) and (B) of AMC3 ORO.FC.115):**

Accepted. The text has been amended accordingly.

**On No 5 (paragraph (c)(3)(iv) of AMC3 ORO.FC.115):**

Accepted. The text has been amended accordingly.

**On No 6 (paragraphs (e) and (f) of AMC3 ORO.FC.115):**

Not accepted. However, after further discussion, the Agency decided to delete completely the draft AMC for CRM trainer examiners. Instead, the responsibility of the operator for the assessment and monitoring of CRM trainers is emphasised in the AMC, and GM is introduced suggesting that the assessment of CRM trainers is conducted by experienced CRM trainers.

**On No 7 (paragraph (f)(3)(iii) of AMC3 ORO.FC.115):**

Accepted. However, the Agency decided to delete completely the draft AMC for CRM trainer examiners.

comment

396

comment by: *Thomson Airways*

AMC3 ORO.FC.115 (2)

A course to allow a competent pilot to be trained as a CRM instructor, including IT skills, has traditionally been about 5 days. Assuming 6 hours of training per day, this means approximately 30 hours, not 40 hours.

Propose that this paragraph (2) (i) is deleted and paragraph (2)(ii) reads 30 hours.

response

Noted.

Please refer to the discussion on minimum training times in Chapter 2 of this CRD.

comment

397

comment by: *Thomson Airways*

AMC3 ORO.FC.115 (e) (1)(i)

We are not convinced of the continuing need for at least 2 CRM events to be completed in a 12 month period, particularly when there is no clear definition of what constitutes a CRM training event. Propose that this paragraph is deleted.

AMC3 ORO.FC.115 (e) (1)(iii)

This paragraph implies that one (singular) refresher training event must occur over the 3 year validity period. Propose that the word "a" is deleted, so that refresher training totalling 8 hours could be completed in small chunks. Also propose that the words "flight crew" are deleted such that the refresher training could be completed with cabin crew. Wording



therefore:

(iii) receive CRM trainer refresher training with the 3-year validity period.

AMC3 ORO.FC.115 (e) (3)(ii)

Propose that this paragraph is deleted. If the CRM trainer is assessed as competent under paragraph (d), why do they need refresher training?

response

Partially accepted.

**On paragraph (e)(1)(i) of AMC3 ORO.FC.115:**

Not accepted. After a substantial discussion within the Agency's Rulemaking Group, the Agency came to the conclusion that 2 CRM trainings in any 12-month period should be seen as a minimum. The term 'CRM training event', instead of 'CRM training course', was deliberately used to be more open and to give operators more flexibility.

**On paragraph (e)(1)(iii) of AMC3 ORO.FC.115:**

Accepted. The text has been amended accordingly.

**On paragraph (e)(3)(ii) of AMC3 ORO.FC.115:**

Not accepted. If this paragraph is deleted, the CRM trainer could avoid the refresher training. However, the intention is to render refresher training mandatory.

**3. Proposed amendments - 3.1. Draft Acceptable Means of Compliance (AMC) and Guidance Material (GM) (Draft Decisions) - 3.1.2. Air operations — Decision 2014/017/R (Part-ORO) - Subpart FC - GM2 ORO.FC.115 Crew resource management (CRM) training**

p. 32

comment

4

comment by: *NFLC, Cranfield University, UK*

GM2 ORO.FC.115 b

CRM training is also carried out during line training. It is not clear how line training fits into this document as many of the requirements are excessive.

response

Noted.

GM2 ORO.FC.115 is meant to give, as guidance, a general overview of the different trainings provided by different personnel. Line training is deliberately not mentioned explicitly.

comment

320

comment by: *IATA (Dragos Munteanu)*

**GM2 ORO.FC.115 (b)(2)**



Clarifications concerning instructors certified in accordance with Part FCL are needed:

a) What are the Part FCL instructors privileges regarding CRM training (classroom / only operational environment?). The link between AMC3 ORO.FC.115 and GM2 ORO.FC 115 is not clear enough.

b) What are the credits gained during Part FCL instructor course in terms of CRM trainer/instructor.

response

Noted.

**On a):** The provisions concerning a flight crew ‘CRM trainer’ responsible for classroom training are laid down in AMC3 ORO.FC.115. An instructor, qualified according to Regulation (EU) No 1178/2011, is not per se permitted to perform CRM training in the classroom. They have to become CRM trainers according to the provisions of AMC3 ORO.FC.115.

**On b):** An instructor, qualified according to Regulation (EU) No 1178/2011, has to fulfil the provisions of AMC3 ORO.FC.115 in order to become a ‘CRM trainer’. Credits for being an instructor are laid down in the NPA in paragraphs (c)(2)(ii) (reduced training time) and (c)(5)(i) (no training for other-than complex motor-powered aircraft).

comment

372

comment by: AEA

**GM2 ORO.FC.115 (b)(2)**

Clarifications concerning instructors certified in accordance with Part FCL are needed:

a) What are exactly Part FCL instructors privileges regarding CRM training (classroom or not?). The link between AMC3 ORO.FC.115 and GM2 ORO.FC 115 is not clear enough.

b) What are the credits gained during Part FCL instructor course

response

Noted.

Please refer to the response to comment No 320.

**3. Proposed amendments - 3.1. Draft Acceptable Means of Compliance (AMC) and Guidance Material (GM) (Draft Decisions) - 3.1.2. Air operations — Decision 2014/017/R (Part-ORO) - Subpart FC - GM3 ORO.FC.115 Crew resource management (CRM) training**

p. 32-33

comment

22

comment by: Federal Office of Civil Aviation FOCA

**GM3 ORO.FC.115 (DESIGN, DELIVERY AND EVALUATION OF CRM TRAINING)**

The checklist in Table 1 provides guidance on the design, delivery and evaluation of CRM training, and on their incorporation into the operator’s safety culture. Elements of the



operator's management systems and the competency-based approach are incorporated in the checklist.

FOCA suggests to add the following requirement to the above:

An evaluation of the CRM training programme according to Table 1, including the CRM skills assessment system and the assessment of an operator's CRM trainers, should be conducted at least every 3 years.

response

Not accepted.

This guidance is meant to support the operator's activities. As such, it is not the intention of the GM to establish additional 'rules'.

comment

82

comment by: *FAA*

Page 33. The checklist uses the words "evaluation" and "measurement" in a way that seems somewhat inconsistent with the clear message of limiting CRM observations to "assessment" only.

response

Noted.

The Agency avoided using the term 'assessment', since within the overall CRM concept this term should be 'reserved' to be used in relation to crew members' assessment.

comment

269

comment by: *ATF - Awareness Training Fakoussa*

This table is typically for very big operators. Small operators require first the management to accept that such costly training is necessary to stay safe.

Therefore a hint in that introduction might help a bit.

suggestion:

The checklist in Table 1 provides guidance to the management of the operator on the design, delivery and evaluation of CRM training and to assist the management of the operator on their incorporation into the operator's safety culture. Elements of the operator's management systems and the competency-based approach are incorporated in the checklist.

response

Not accepted.

The Agency prefers to keep the original text addressing the guidance in general terms to the operator. The operator as such can then decide whether the management or e.g. the training department is responsible.



**3. Proposed amendments - 3.1. Draft Acceptable Means of Compliance (AMC) and Guidance Material (GM) (Draft Decisions) - 3.1.2. Air operations — Decision 2014/017/R (Part-ORO) - Subpart FC - GM4 ORO.FC.115 Crew resource management (CRM) training**

p. 33-34

comment 270

comment by: *ATF - Awareness Training Fakoussa*

Skip resilience completely. Although its become a fashion word and sounds very scientific, it is covered already in stress coping and has been covered since crm exists.

Unfortunately stress coping did not achieve the success as expected, which is understandable, as it cannot be controlled through knowledge.

Adding now another knowledge based word and training objective does not make any sense.

Better improve the quality of the CRM instructor/trainer to be able to incorporate practical stress coping techniques and then resilience is the natural result.

response

Not accepted.

Please refer to the discussion on resilience development in Chapter 2 of this CRD.

comment 297

comment by: *DGAC France*

The issue is to know whether this guidance material can be understood by the operators it is really intended to, which are operators not familiar with the resilience concept. DGAC France finds it quite general from this perspective and wonders if this guidance material will be easily understood despite that the need for a guidance material is recognized (since resilience development is new item). Perhaps an example of a situation where this concept applies, and how it applies, could clarify.

response Noted.

The concept of resilience development is indeed a new approach. However, it is related to other CRM training elements. Therefore, the personnel responsible for establishing the operator's CRM training should be familiar with this concept at least to a certain degree. The intention of the guidance is to further explain the concept. The Agency is of the opinion that a specific example would probably cause more confusion than clarifying the issue.

**3. Proposed amendments - 3.1. Draft Acceptable Means of Compliance (AMC) and Guidance Material (GM) (Draft Decisions) - 3.1.2. Air operations — Decision 2014/017/R (Part-ORO) - Subpart FC - GM5 ORO.FC.115 Crew resource management (CRM) training**

p. 34-35



comment	<p>286 <span style="float: right;">comment by: Steve DEVERALL</span></p> <p>A GM should be published to permit an operator to use the EBT Core Competencies as documented in Appendix 1 of ICAO Doc 9995 Manual of Evidence Based Training, as an alternative to NOTECHS. This will allow operators to align their CRM and EBT programmes and take credit for the embodiment of CRM assessment and training within EBT. Otherwise, confusion will be created between what are CRM elements and what are EBT Competencies. CRM should not be considered as an extra item in the training programme but as an embedded principle of all training. EBT recognises this and operators should not be discouraged from implementing such programmes. This NPA should seek to remove confusion and modernise CRM as part of EBT.</p>
response	<p>Not accepted.</p> <p>For flight crew, reference to evidence-based training (EBT) is made in paragraph (a)(8) of AMC1 ORO.FC.115 of the NPA. It is the understanding of the Agency that EBT is only applicable to recurrent training, but not limited to CRM training. It is not the intention of the Agency to introduce in detail the concept of EBT within the present rulemaking task. This should be done using a broader approach. Therefore, the Agency came to the conclusion not to develop guidance related to EBT.</p>
comment	<p>321 <span style="float: right;">comment by: IATA (Dragos Munteanu)</span></p> <p><b>GM5</b> <span style="float: right;"><b>ORO.FC.115</b></span></p> <p>Comment: The core competences listed in table 1 differ from the ICAO core competences as described in ICAO Doc 9995 - Manual of Evidence-based-training and the IATA Evidence Based Training Implementation Guide.</p> <p>The GM should specify that besides NOTECHS there are also other validated and accepted methods.</p>
response	<p>Not accepted.</p> <p>The ICAO core competencies, as laid down in ICAO Doc 9995, are discussed in the Explanatory Note (Chapter 2) of the NPA (see pp. 5–6 of the NPA). It is highlighted that the majority (five out of eight core competencies), but not all competencies though, are related to CRM. Since NOTECHS is addressing CRM skills only, it is no surprise that the NOTECHS categories and the ICAO overall core competencies are not the same.</p> <p>The request to specify in the GM that apart from NOTECHS other accepted methods also exist was discussed with the Review Group. The recommendation of the Review Group was not to mention other methods, since only NOTECHS can be described as the only one with an ‘independent standing’ over a long period of time. Please refer also to the discussion on the subject in Chapter 2 of this CRD.</p>



comment	373	comment by: <i>AEA</i>
	<p><b>GM5 ORO.FC.115</b></p> <p>Comment: The core competences listed in table 1 differ from the ICAO core competences. Add beside NOTECHS also other validated and accepted methods (such as SHAPE)</p>	
response	<p>Not accepted.</p> <p>The ICAO core competencies, as laid down in ICAO Doc 9995, are discussed in the Explanatory Note (Chapter 2) of the NPA (see pp. 5–6 of the NPA). It is highlighted that the majority (five out of eight core competencies), but not all competencies though are related to CRM. Since NOTECHS is addressing CRM skills only, it is no surprise that the NOTECHS categories and the ICAO overall core competencies are not the same.</p> <p>The request to specify in the GM that apart from NOTECHS other accepted methods also exist was discussed with the Review Group. The recommendation of the Review Group was not to mention other methods, since only NOTECHs can be described as the only one with an ‘independent standing’ over a long period of time. Please refer also to the discussion on the subject in Chapter 2 of this CRD.</p>	

comment	376	comment by: <i>European HF Advisory group</i>
	<p>(a) What would be seen as a validated method for the development of a behavioural marker system similar to NOTECHs.</p> <p>How would an Operator demonstrate their methodology is validated</p>	
response	<p>Noted.</p> <p>It is not the Agency to decide whether a method is accepted. The operator has to demonstrate to the competent authority that the method used is appropriate. The competent authority and the operator have to agree on what is needed for the approval.</p>	

**3. Proposed amendments - 3.1. Draft Acceptable Means of Compliance (AMC) and Guidance Material (GM) (Draft Decisions) - 3.1.2. Air operations — Decision 2014/017/R (Part-ORO) - Subpart FC - GM6 ORO.FC.115 Crew resource management (CRM) training**

p. 35-36

comment	23	comment by: <i>Federal Office of Civil Aviation FOCA</i>
	<p>GM6 ORO.FC.115 - Crew resource management (CRM) training: In line with our comments regarding the suppression of the requirements on the CRM trainer examiner FOCA suggests</p>	



the following wording:

The checklist in Table 1 provides guidance on the assessment of a flight crew CRM trainer. If a flight crew CRM trainer is competent in his/her role, the response to the questions in Table 1 should be 'yes'. The flight crew CRM trainer assessor (experienced CRM trainer, nominated by the operator) ~~examiner~~, when answering the questions in Table 1, should provide justifications and should give examples related to the responses given.

response Partially accepted.

After further discussion, the Agency decided to delete completely the draft AMC for CRM trainer examiners. The GM has been rephrased, suggesting that the assessment of CRM trainers is conducted by experienced CRM trainers.

comment 374

comment by: AEA

**GM6 ORO.FC.115**

In Table 1, the fifth question to be answered to assess CRM trainer implies the integration of practical CRM within technical training and line operations. Since the CRM trainer is supposed to teach only in non-operational environment, classroom (GM2 ORO.FC.115), this requirement would be hard to assess. Suggested question would be "Did the CRM trainer show how CRM is integrated in technical training and line operations?"

response Accepted.

The text has been amended accordingly.

**3. Proposed amendments - 3.1. Draft Acceptable Means of Compliance (AMC) and Guidance Material (GM) (Draft Decisions) - 3.1.2. Air operations — Decision 2014/017/R (Part-ORO) - Subpart FC - GM7 ORO.FC.115 Crew resource management (CRM) training**

p. 36

**3. Proposed amendments - 3.1. Draft Acceptable Means of Compliance (AMC) and Guidance Material (GM) (Draft Decisions) - 3.1.2. Air operations — Decision 2014/017/R (Part-ORO) - Subpart FC - SECTION II — ADDITIONAL REQUIREMENTS FOR COMMERCIAL AIR TRANSPORT**

p. 36-42

comment 237

comment by: ECOGAS/SVFB/SAMA



**Section II- Add requirements for CAT Operations**

It should not address CAT but mass transport (Air Carriers and Scheduled Charter, as evidenced by the cited FAA study on page 4 or x.

See copy here of the remark under GEN

We understand that by entering the req from CAT to GEN it will apply to every aspect.

This is again wrong. According a risk based approach, it should be first and foremost find way into mass transport where risk potential is highest first.

response

Noted.

The decision to introduce additional requirements for CAT in Section II is a general one and is not related to the present rulemaking task.

It has been explained in the Explanatory Note of the NPA why the Agency came to the conclusion to expand the provisions for CRM training (from being applicable not only to CAT but to all operations where Part-ORO is applicable). Instead, the provisions now distinguish between multi-pilot operations and single-pilot operations with substantial simplifications for the latter and further relaxation for light aircraft pilots.

comment

comment by:

181

European Cockpit Association

246

Vereinigung Cockpit e.V.

424

Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria

**AMC1 ORO.FC.115&215 (h)****EASA proposal:**

(text deleted)

~~The assessment of CRM should not include any testing or checking of the flight crew or flight crew member's CRM performance.~~

**ECA/VC suggestion for the text: THIS PARAGRAPH MUST BE REINSTATED: *The assessment of CRM should not include any testing or checking of the flight crew or flight crew member's CRM performance.***<sup>104</sup>

**Justification:**

We strongly disagree with the deletion of the following paragraph:

*"The assessment of CRM should not include any testing or checking of the flight crew or flight crew member's CRM performance"* AMC1 ORO.FC.115&215 (h);

CRM training is not an easy subject. It is hard to quantify, there is often some confusion on

<sup>104</sup> This paragraph is only included in the comments from the European Cockpit Association and the Vereinigung Cockpit e.V.



definitions and meanings and not at the least, it is prone to subjective assessments.

It is obviously difficult for anyone to accept an evaluation which is subjective, rather than based on clearly defined criteria, concepts and terms. So the highest care must be taken that this does not happen when the license of a pilot is at stake during a check ride.

This is not to say that there cannot be improvements flagged up to a pilot as regard to CRM, but **CRM assessments – which will always contain subjective elements – should not be check-relevant**, i.e. not lead to a failure during a check ride.

This was an **essential element built into the current system and must be maintained**.

response

Noted.

AMC1 ORO.FC.115&215 has been deleted completely. However, there must be a misunderstanding. Paragraph (h) of AMC1 ORO.FC.115&215 did not contain the statement 'The assessment of CRM should not include any testing or checking of the flight crew or flight crew member's CRM performance.'

comment

comment by:

182

*European Cockpit Association*

183

*European Cockpit Association*

247

*Vereinigung Cockpit e.V.*

385

*SNPL FRANCE ALPA*

425

*Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria***AMC1 ORO.FC.115&215 (h) (6) (iii)****EASA proposal:**(text/word 'repetitive' deleted)**ECA/VC suggestion of the text:** THIS WORD REPETITIVE MUST BE REINSTATED: (A) *only observable, **repetitive** behaviors are assessed*,<sup>105</sup>**Justification:**

'Repetition' is an integral part of NOTECH's principles. We strongly regret that this principle has disappeared from the text of the proposed AMC, without any explanation nor justification.

**'Repetitive' should be reintegrated in the paragraph (h)(6)(i) *only observable, repetitive behavior are assessed*.**

response

Not accepted.

AMC1 ORO.FC.115&215 has been deleted completely. Consequently, the term referenced in paragraph (h)(6)(i) has also been deleted. However, in paragraph (h)((6)(i) of

<sup>105</sup> This paragraph is only included in the comments from the European Cockpit Association and the Vereinigung Cockpit e.V.



AMC1 ORO.FC.115 of the NPA the term ‘repetitive’ has also been deleted. The reason is that if behaviour leads to an unacceptable reduction in the safety margin, it then should be assessed in any case, regardless if it is repetitive or not.

comment

comment by:

184

European Cockpit Association

248

Vereinigung Cockpit e.V.

426

Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria

**AMC1 ORO.FC.115&215 (h) (6) (iii)****EASA proposal:**

*(...) assessments should include behavior that contributes to a significant reduction in safety margins*

**ECA/VC suggestion of text:** THE CURRENT WORDING IS TO BE MAINTAINED (INSTEAD OF THE NEWLY PROPOSED ONE): *(...) assessments should include behavior that contributes to a technical failure, such technical failure being errors leading to an event that requires debriefing by the person conducting the line check.*<sup>106</sup>

**Justification:**

The current system based on the wording “assessments should include behavior that contributes to a technical failure, such technical failure being errors leading to an event that requires debriefing by the person conducting the line check” has worked and continues to work properly. Therefore **there is no need to change it.** ‘If not broken, don’t fix it’.

In addition the current proposal to amend it to “assessments should include behavior that contributes to a reduction in safety margins, leading to an event that requires debriefing by the person conducting the test or check” is highly problematic and would have **negative consequences.**

First of all it detaches the CRM assessment from a clearly understood concept– a **‘technical failure’**; It replaces **‘technical failure’** with a very subjective **“reduction in safety margins”**.

This **“reduction in safety margins”** is undefined and wide open for interpretation. Therefore, **the newly proposed text makes the CRM evaluation subjective and hence difficult to implement, to apply uniformly and without opening to door to contested interpretations and potential abuse.**

Hence, the current wording is to be maintained.

response

Noted.

AMC1 ORO.FC.115&215 has been deleted completely. However, concerning the text proposed by the Agency in paragraph (h)(6)(iii) of AMC1 ORO.FC.115 of the NPA, please refer

<sup>106</sup> This paragraph is only included in the comments from the European Cockpit Association and the Vereinigung Cockpit e.V.



to the discussion on assessment in Chapter 2 of this CRD.

comment

comment by:

155

Nuno Queiroz

186

European Cockpit Association

250

Vereinigung Cockpit e.V.

388

SNPL FRANCE ALPA

428

Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria

### AMC1 ORO.FC.115&215 (h)

#### EASA proposal:

(Text deleted)

~~In order to enhance the effectiveness of the program, this methodology should, where possible, be agreed with flight crew representatives.~~

THE CURRENT TEXT IS TO BE MAINTAINED (INSTEAD OF THE NEWLY PROPOSED ONE): ***In order to enhance the effectiveness of the program, this methodology should, where possible, be agreed with flight crew representatives.***<sup>107</sup>

#### Justification:

**We strongly disagree with the deletion of the paragraph “In order to enhance the effectiveness of the program, this methodology should, where possible, be agreed with flight crew representatives.”** AMC1 ORO.FC.115&215 (h).

The proposal to exclude Flight Crew Representatives, i.e., Pilots, from the process of developing an effective method of assessment of CRM skills is a major step backwards in the concepts of Safety and Just Cultures, especially of the outcome of the operation.

The combination of a subjective assessment (based on an undefined term of ‘reduction is safety margins’ which is open to subjective interpretations) and the exclusion of pilots from the whole process in which the methodology is developed is in our view the worst proposal of this NPA.

The provision that “methodology, should, where possible, be agreed with flight crew representatives” was a key requirement when CRM was introduced.

All stakeholders were very much aware that a successful CRM introduction would only be possible if there was enough trust in the system. In order to guarantee that trust the requirement to involve flight crew representatives had been included on purpose. This requirement has shown its benefit since.

There are some who argue that CRM is now well established and thus such a requirement might no longer be necessary. Although there are indeed airlines where CRM is nowadays

<sup>107</sup> This paragraph is only included in the comments from European Cockpit Association, Vereinigung Cockpit e.V. and SNPL FRANCE ALPA.



uncontested, this regretfully is not the case everywhere. Even in well established companies, the safety culture and Just Culture environment are not always as developed as they should be. In such an environment, this provisions remains key to ensure CRM is widely accepted, is seen as a safety tool and is not abused to 'get rid of the rotten apples'. This provision is still very necessary to build and keep the trust in the CRM system.

Also, new start-ups that cannot bank on a long-built trust and an established mature safety culture within the company. They will have to go through the process from scratch and the provision will therefore be necessary.

<sup>108</sup>Furthermore, we do not see a contradiction with the fact that "State laws regulate agreements between company owners and employee representatives". The requirement to include flight crew representatives in the process of developing an effective method of assessment of CRM skills, is not an industrial issue but a technical one, which is necessary to ensure CRM is understood and used as a safety tool and benefits from the trust of all involved.

Finally, in companies where the current system of consulting flight crew representatives works well and has shown its benefits, the retention of the current text will not entail any disadvantages (while the deletion might well have negative consequences over time). In companies where the system does not work properly, or in newly set-up companies, the retention of this wording will make a significant positive difference.

For these reasons **we strongly recommend to leave this essential requirement in the text**. If we pull out the guarantee that ensures trust, we risk damaging all the benefits that CRM brings to the aviation safety system.

<sup>109</sup>**THE CURRENT TEXT IS TO BE MAINTAINED (INSTEAD OF THE NEWLY PROPOSED ONE):** In order to enhance the effectiveness of the program, this methodology should, where possible, be agreed with flight crew representatives.

response

Not accepted.

AMC1 ORO.FC.115&215(h) has been completely deleted. Consequently, the referenced statement has also been deleted. However, please refer to the discussion on assessment and on the agreement with flight crew representatives in Chapter 2 of this CRD.

comment

195

comment by: FPA SSC

Original text:

(h) Assessment of CRM skills

(1) Assessment of CRM skills is the process of observing, recording, interpreting and debriefing crews and crew member's performance and knowledge using an acceptable methodology in the context of overall performance. It includes the

<sup>108</sup> The following text is only included in the comment from Nuno Queiroz, European Cockpit Association, SNPL FRANCE ALPA and Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.

<sup>109</sup> The following text is only included in the comment from Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.



concept of self-critique, and feedback which can be given continuously during training or in summary following a check. In order to enhance the effectiveness of the programme, this methodology should, where possible, be agreed with flight crew representatives.

Proposed text:

(h) Assessment of CRM skills

(1) Assessment of CRM skills is the process of observing, recording, interpreting and debriefing crews and crew member's performance by a CRM assessment qualified examiner using a validated or generally accepted methodology in the context of the overall performance. It includes the concept of self-critique, and feedback which can be given continuously during training or in summary following a check. (2) In order to enhance trust towards and effectiveness of the programme, this methodology should, when requested by the pilot representation body, be agreed with flight crew representatives.

Comments:

Keep the text. As long as the thorough assessment of CRM skills is taking baby steps, representation is needed. Flight crew representation should be made possible if requested by the flight crew body. The representative should be an elected member of the flight crew body.

response Noted.

AMC1 ORO.FC.115&215 has been deleted completely. However, concerning the proposed text, please refer to the discussion on assessment and on the agreement with flight crew representatives in Chapter 2 of this CRD.

**3. Proposed amendments - 3.1. Draft Acceptable Means of Compliance (AMC) and Guidance Material (GM) (Draft Decisions) - 3.1.2. Air operations — Decision 2014/017/R (Part-ORO) - Subpart FC - SECTION II — ADDITIONAL REQUIREMENTS FOR COMMERCIAL AIR TRANSPORT - AMC1 ORO.FC.215 Initial operator's crew resource management (CRM) training**

p. 42

comment 398

comment by: Thomson Airways

AMC1 ORO.FC.215

It is not clear in the regulation when an Initial Operators Conversion CRM course must be completed. If a pilot has completed Initial CRM training with another operator or during basic flying training, when they join a company do they complete Initial Operators CRM



training or Operator Conversion Course (Operator) CRM training.

Propose that this section is re-worded:

Initial Operator's CRM training should be completed when an Initial CRM course has not previously been completed with another operator or flight training organisation. This training should:

(a) .....

response

Partially accepted.

The Implementing Rule states in paragraph (a) of ORO.FC.215: 'The flight crew member shall have completed an initial CRM training course before commencing unsupervised line flying.' Therefore, in general, the Agency does not see the need for clarification in the AMC. However, for clarification purposes, the Agency decided to include paragraph (b)(1) in AMC1 ORO.FC.115, stating that it is sufficient for the crew member to complete the initial operator's CRM training (only) once (please refer to the Annex of the associated Decision 2015/022/R). The operator's conversion course has to be completed according to paragraph (c) of AMC1 ORO.FC.115.

**3. Proposed amendments - 3.1. Draft Acceptable Means of Compliance (AMC) and Guidance Material (GM) (Draft Decisions) - 3.1.2. Air operations — Decision 2014/017/R (Part-ORO) - Subpart FC - SECTION II — ADDITIONAL REQUIREMENTS FOR COMMERCIAL AIR TRANSPORT - AMC1 ORO.FC.220 Operator conversion training and checking**

p. 42

comment

60

comment by: DLH

(5)(ii) As the mentioned trainings have to be conducted by EM-Trainers which have their own qualification requirements, this paragraph must have an exception for EM-Trainers.

EASA should check the rules concerning the qualification of EM-trainers. A less detailed training for EM-trainers concerning CRM is needed, because the focus in these trainings is on procedures. Most EM-trainers are non FC/CC, that means they don't fulfill the requirements under AMC3 OROFC.115 (2) and CC.115 (2).

response

Partially accepted.

After further discussion with the Review Group, the Agency decided to clarify the issue by explaining that the provisions for CRM trainers (AMC3 ORO.FC.115 and AMC3 ORO.CC.115(e)) are not applicable to trainers or instructors delivering training other than CRM training, but integrating CRM elements into this training (please refer to paragraph (a)(2)(ii) of AMC3 ORO.FC.115 and to paragraph (a)(2) of AMC3 ORO.CC.115(e)) of the Annex to the associated Decision 2015/022/R.



**3. Proposed amendments - 3.1. Draft Acceptable Means of Compliance (AMC) and Guidance Material (GM) (Draft Decisions) - 3.1.2. Air operations — Decision 2014/017/R (Part-ORO) - Subpart FC - SECTION II — ADDITIONAL REQUIREMENTS FOR COMMERCIAL AIR TRANSPORT - AMC1 ORO.FC.230 Recurrent training and checking**

p. 43-45

comment

10

comment by: *Stefano Cignoni*

(3) (iii) **unless the observed behaviour contributed to a significant reduction in safety margins.**

It's too general it could be interpreted in many ways.

It could led to different subjective judgment according to who is evalutaing pilot performance.

response

Noted.

Please refer to the discussion on this subject in Chapter 2 of this CRD.

comment

15

comment by: *Alitalia*

we found the statement ..significant reduction in safety margins.. too generic and leaving too much personal interpretation during a CRM skill assessment affecting the relative evaluation.

response

Noted.

Please refer to the discussion on this subject in Chapter 2 of this CRD.

comment

43

comment by: *Ryanair*

**(d) Personnel providing training and checking**

(4) CRM:

(ii) classroom CRM training by at least one CRM trainer, qualified as specified in AMC3 ORO.FC.115, who may be assisted by experts in order to address specific areas.

**Comment:**

It is important to operators that suitably qualified CC CRM Trainers are permitted to teach Combined Flight Crew/Cabin Crew recurrent CRM.

**Proposed text:**



	<p>(4) CRM:</p> <p>(ii) classroom CRM training by at least one CRM trainer, qualified as specified in AMC3 ORO.FC.115, who may be assisted by experts in order to address specific areas.</p> <p>(iii) Combined CRM Training for Flight Crew and Cabin Crew by at least one CRM trainer, qualified as specified in AMC3 ORO.FC.115 or AMC3 ORO.CC.115</p>
response	<p>Partially accepted.</p> <p>The Agency accepts the proposal in general; however, the Agency decided to incorporate the provision not under the heading 'Recurrent training', but in paragraph (a)(6) of AMC1 ORO.FC.115 and in paragraph (a)(6) of AMC1 ORO.CC.115(e) on combined CRM training.</p>

comment	<p style="text-align: right;">comment by:</p> <p>125 <i>A.L.P.L. - Association Luxembourgeoise des Pilotes de Ligne a.s.b.l.</i></p> <p>154 <i>Nuno Queiroz</i></p> <p>185 <i>European Cockpit Association</i></p> <p>249 <i>Vereinigung Cockpit e. V</i></p> <p>387 <i>SNPL FRANCE ALPA</i></p> <p>427 <i>Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria</i></p> <p><b>AMC1 ORO.FC 230 b) (3) (iii)</b></p> <p><b>EASA proposal:</b></p> <p>CRM assessment <del>alone</del> should not be used as a reason for a failure of the line check, <u>unless the observed behaviour contributed to a significant reduction in safety margins.</u></p> <p><b>ECA/VC/SNPL suggestion of text:</b> THE <u>CURRENT WORDING IS TO BE MAINTAINED</u> (WITHOUT THE NEWLY PROPOSED ADDITION): <b>CRM assessment alone should not be used as a reason for a failure of the line check.</b><sup>110</sup></p> <p>If EASA's proposed additional wording is used, CRM may be used to fail or pass a pilot without a clear, objective impact of the overall performance (and based only upon a subjective, non-defined "safety margins").</p> <p>This change repeats one of the changes to 'Assessment of CRM skills' in paragraph (h) of AMC1 ORO.FC.115.</p> <p>CRM concept is hard to quantify, there is often some confusion on definitions and meanings and not at the least, it is prone to subjective assessments.</p> <p>In fact the term "subjective assessments" already beholds one of our main concerns. It is obviously difficult for anyone to accept an evaluation which is subjective, rather than based on clearly defined criteria, concepts and terms. So the highest care must be taken that this</p>
---------	--

<sup>110</sup> The text above was only included in the comments from European Cockpit Association, Vereinigung Cockpit e. V. and SNPL FRANCE ALPA.



does not happen when the license of a pilot is at stake during a check ride.

This is not to say that there cannot be improvements flagged up to a pilot as regard to CRM, but CRM assessments – which will always contain subjective elements – should not be check-relevant, i.e. not lead to a failure during a check ride. This was an essential element built into the current system and must be maintained.

We therefore strongly oppose using CRM to fail or pass a pilot without a clear, objective impact on the overall performance and based only upon a subjective “safety margins” definition. Hence, the proposed additional wording should be deleted.

<sup>111</sup>**THE CURRENT WORDING IS TO BE MAINTAINED (WITHOUT THE NEWLY PROPOSED ADDITION):** CRM assessment alone should not be used as a reason for a failure of the line check.

response

Noted.

Please refer to the discussion on this subject in Chapter 2 of this CRD.

comment

196

comment by: FPA SSC

Original text:

(iii) CRM assessment alone should not be used as a reason for a failure of the line check, unless the observed behaviour contributed to a significant reduction in safety margins

Proposed text:

(iii) CRM assessment alone should not be used as a reason for a failure of the line check, unless the observed behaviour, without doubt and alone, contributed to a significant reduction in safety margins

Comments:

CrM is difficult to assess. "Significant reduction" needs clarifications and examples.

response

Noted.

Please refer to the discussion on this subject in Chapter 2 of this CRD.

<sup>111</sup> The following paragraph was only included in the comment from Betriebsrat NIKI - works council of NIKI Luftfahrt GmbH, Austria.



comment	296	comment by: DGAC France
	DGAC France fully supports this inclusion and proposes to extend it to operator proficiency checks.	
response	Noted. Please refer to the discussion on this subject in Chapter 2 of this CRD.	

**3. Proposed amendments - 3.1. Draft Acceptable Means of Compliance (AMC) and Guidance Material (GM) (Draft Decisions) - 3.1.2. Air operations — Decision 2014/017/R (Part-ORO) - SUBPART CC — CABIN CREW - SECTION 1 — GENERAL REQUIREMENTS - AMC1 ORO.CC.115(e) Conduct of training courses and associated checking - (a) General**

p. 45-46

comment	44	comment by: Ryanair
	<p><b>(a) General</b></p> <p><b>(1) Training environment</b></p> <p><b>Comment:</b></p> <p>The inclusion in a regulation to be applied in (a) 'General' requiring use such facilities / devices will NOT be practical for an operator and will create significant and expensive bottle necks to CC training. An operator will have a number of different courses applicable to CC training and not all courses utilise training devices such as 'cabin training device' or 'aircraft'. Therefore we insist that this statement is removed or amended.</p> <p><b>Proposed text:</b></p> <p>Suggest remove '<i>and in the operational environment (cabin training device and aircraft)</i>' or change as follows:</p> <p>(a)General</p> <p>(1) Training environment</p> <p>CRM training should be conducted in the non-operational environment (classroom and computer-based) and when practicable elements of CRM training should be integrated into other Initial and Conversion practical training in the operational environment (cabin training device and aircraft). Tools such as group discussions, team task analysis, team task simulation and feedback should be employed.</p>	
response	Not accepted. Paragraph (a)(1) of AMC1 ORO.CC.115(e) is meant to introduce terms in a wider sense, not to prescribe specifics.	



comment

45

comment by: *Ryanair***(4) Cabin training devices and aircraft.****Comment:**

This section (4) must be removed or revised to avoid significant additional costs and bottlenecks to CC training who do not use full replica cabin training devices for all elements of training.

**Proposed text:**

(4) Cabin training devices and aircraft. When practicable, relevant parts of practical CRM training should be integrated into other Initial and Conversion practical training conducted in representative cabin training devices that reproduce a realistic operational environment, or in the aircraft. During practical training, interaction should be encouraged.

response

Partially accepted.

Paragraph (a)(4) of AMC1 ORO.CC.115(e) has been rephrased to address the concern raised.

comment

46

comment by: *Ryanair***(6) Combined CRM training for flight crew and cabin crew****Comment:**

The inclusion of specified hours/ duration of this training is 'over-regulation'. An operator should ensure sufficient time is allocated to ensure effective combined training is delivered. The proviso added that these hours may be reduced when 'faultless co-operation and co-ordination among crewmembers' is met is completely unrealistic and impossible to determine given the nature of CRM.

If specific hours are applied then they should be reasonably distributable over the three year cycle that applies. Therefore we would consider that 6 hours is adequate allowing for 2 hours dedicated to combined CRM each year over three years taking into account the minimum requirements specified in AMC1 ORO.FC.115 (6) (iii).

**Proposed text:**

(ii) The combined training should be a minimum of 6 hours over a period of 3 years. The minimum hours may be reduced when evidenced by the operator's management system, i.e. e.g. when the operational data collected and analysed demonstrate faultless effective cooperation and coordination among crew members.

response

Noted.

After further discussion, the Agency decided to delete the complete statement concerning a possible reduction in minimum training times. On the further discussion on minimum



training times, please refer to the discussion in Chapter 2 of this CRD.

comment 47

comment by: *Ryanair*

**(6) Combined CRM training for flight crew, cabin crew and technical crew**

**Comment:**

There must be a provision within this AMC to allow 'Combined CRM training' instruction for Flight crew, Cabin Crew and/or Technical Crew by either Flight Crew or Cabin Crew CRM Trainers in the classroom environment. Currently there is no clear provision for this and possible conflict in AMC3 ORO.FC.115(b).

**Proposed text:**

(6) Combined CRM training for flight crew, cabin crew and technical crew

(v) Combined CRM training should be conducted by flight crew or cabin crew CRM Trainers

(vi) There should be effective liaison between flight crew, cabin crew and technical crew training departments. Provision should be made for transfer of relevant knowledge and skills between flight crew, cabin crew and technical crew CRM trainers.

response

Accepted.

The text has been amended accordingly.

comment 61

comment by: *DLH*

(a)(1) substitute "(classroom and computer-based) by (classroom and if required computer-based)

substitute "(cabin training device and aircraft)" by (cabin training device or aircraft). It shouldn't be obligatory to do both. Only classroom in combination with cabin training device is already sufficient.

response

Not accepted.

Paragraph (a)(1) of AMC1 ORO.CC.115(e) is meant to introduce terms in a wider sense, not to prescribe specifics.

comment 62

comment by: *DLH*

(6)(i) delete "annual" as in FC



	(6)(ii) see comment 54
response	<p>Partially accepted.</p> <p>In paragraph (a)(6)(i) of AMC1 ORO.CC.115(e) of the NPA, 'annual' has been deleted. On paragraph (a)(6)(ii) of the NPA: After further discussion, the Agency decided to delete the complete statement concerning a possible reduction in minimum training times.</p>

comment	<p>83 <span style="float: right;">comment by: FAA</span></p> <p>Page 46. Requiring performance to be "faultless" before allowing a reduction of minimum hourly requirements may be an overly steep criterion, unobtainable by a significant proportion of certificate holders.</p>
response	<p>Accepted.</p> <p>On paragraph (a)(6)(2) of AMC1 ORO.CC.115(e) of the NPA: After further discussion, the Agency decided to delete the complete statement concerning a possible reduction in minimum training times.</p>

comment	<p>322 <span style="float: right;">comment by: IATA (Dragos Munteanu)</span></p> <p><b>AMC1 ORO.CC.115(e) sub para (a)(3)</b></p> <p>Comment: We consider that in (a)(3), the term "a stand-alone training method" should be clarified.</p>
response	<p>Noted.</p> <p>Please refer to the response to comment No 377 (covered under No 1).</p>

comment	<p>323 <span style="float: right;">comment by: IATA (Dragos Munteanu)</span></p> <p><b>AMC1 ORO.CC.115(e) sub para (a)(6)(ii)</b></p> <p>Comment: We recommend EASA to remove the minimum duration requirement of 8 hours over a period of 3 years.</p> <p>Meeting the training objectives should be the controlling element and not the training time. The CRM training requirement of an 8 hour CRM operator course deprives an operator to integrate combined CRM training in other training for crew.</p> <p>Furthermore, an integrated combined CRM training of 8 hours over a period of 3 years is</p>
---------	--



difficult to prove/demonstrate.

Also we recommend to remove the text "faultless cooperation and coordination" as described in our comment on Flight Crew similar provision.

response Partially accepted.

Concerning minimum training times, please refer to the discussion in Chapter 2 of this CRD. On paragraph (a)(6)(2) of AMC1 ORO.CC.115(e) of the NPA: After further discussion, the Agency decided to delete the complete statement concerning a possible reduction in minimum training times.

comment 324

comment by: IATA (Dragos Munteanu)

**AMC1 ORO.CC.115(e) sub para (a)(1)**

We recommend to substitute "(classroom and computer-based)" by (classroom and if required computer-based) and substitute "(cabin training device and aircraft)" by (cabin training device or aircraft). It shouldn't be mandatory to use both the aircraft and the cabin training device. Only classroom in combination with cabin training device is already sufficient.

response Not accepted.

Paragraph (a)(1) of AMC1 ORO.CC.115(e) is meant to introduce terms in a wider sense, not to prescribe specifics.

comment 335

comment by: IATA (Dragos Munteanu)

**AMC 1 ORO.CC.115(e)(a)(5)**

The text which mentions that CRM principles should be integrated in "...operations including checklist, briefings, emergency and abnormal procedures." is not pertinent. The chapter is about CRM training, not operations. In EU-OPS there was the same principle but not in the training part.

response Noted.

It is not clear what the proposal of the comment relates to. The Agency is of the opinion that the integration of CRM principles into cabin crew training should be highlighted.

comment 337

comment by: IATA (Dragos Munteanu)



AMC 1ORO.CC.115(e)(a)(2)

by giving examples "such as group discussions, team task analysis etc.." there is a risk that NAA inspectors will interpret this as an exhaustive list which can hinder new future innovative solutions. The text should offer the possibility of any option the Operator validates as effective through its Management System and subject matter experts.

response

Noted.

The Agency is of the opinion that since the wording 'such as' and 'etc.' is used, the text offers the possibility of any other option.

comment

377

comment by: AEA

**1. AMC1 ORO.CC.115(e) sub para (a)(3)**

Comment: In (a)(3), what is meant with "a stand-alone training method"? Please clarify.

**2. AMC1 ORO.CC.115(e) sub para (a)(6)(ii)**

Comment: Delete the minimum duration requirement of 8 hours over a period of 3 years. Meeting the training objectives should be leading over training time. The CRM training requirement of an 8 hour CRM operator course deprives an operator to integrate combined CRM training in other training for crew. Furthermore, an integrated combined CRM training of 8 hours over a period of 3 years is difficult to prove/demonstrate.

**3. AMC1 ORO.FC.220 sub para (a)(5)(ii)**

As the mentioned trainings have to be conducted by EM-Trainers which have their own qualification requirements, this paragraph must have an exception for EM-Trainers. EASA should check the rules concerning the qualification of EM-trainers. A less detailed training for EM-trainers concerning CRM is needed, because the focus in these trainings is on procedures. Most EM-trainers are non FC/CC, that means they don't fulfil the requirements under AMC3 OROFC.115 (2) and CC.115 (2).

**4. AMC1 ORO.CC.115(e) sub para (a)(1)**

substitute "(classroom and computer-based) by (classroom and if required computer-based) substitute "(cabin training device and aircraft)" by (cabin training device or aircraft). It shouldn't be obligatory to do both. Only classroom in combination with cabin training device is already sufficient.

**5. AMC1 ORO.CC.115(e) sub para (a)(6)(ii)**

Delete "annual" as in FC

See Comment on AMC1.ORO.FC115 (a)

**6. AMC1 ORO.CC.115(e) sub para (a)(6)(ii)**

Comment: delete "i.e. when the operational data collected and analysed demonstrate faultless cooperation and coordination among crew members".

Because the abbreviation 'i.e' (meaning: it est) is used, this is the minimum condition



(faultless?) for reducing the minimum hours of the combined CRM training. This is too strict. However the option to reduce training based on analyzed operational data (in general) is welcomed and supported.

**7. AMC1 ORO.CC.115(e) sub para (b)**

Comment: Delete the minimum course duration requirement of 8 hours.

Meeting the training objectives should be leading over training time. The training requirement of an 8 hour CRM operator course deprives an operator to integrate CRM training in other initial training elements. Furthermore, an integrated CRM training of 8 hours is difficult to prove/demonstrate.

**8. AMC1 ORO.CC.115(e) sub para (e) (2)**

This paragraph is true, but this should be the result of the training and doesn't need to be demonstrated during the training.

**9. AMC1 ORO.CC.115(e)**

AEA does not support the fact that the only way to become CC CRM trainer is to be at least a former Cabin Crew or an experienced non Cabin Crew CRM trainer (grand fathering purposes).

The wording is not clear but the grandfathering purpose would apply if only former trainer could become trainer. This is not the case stated in AMC3 ORO.CC.115(e) (a)(2).

**10. AMC1 ORO.CC.115(e)**

See comment on AMC1.ORO.FC.115 sub para (f)

response

Partially accepted.

**On No 1 (paragraph (a)(3) of AMC1 ORO.CC.115(e)):**

Noted. The Agency is of the opinion that this term is self-explanatory, namely the one-and-only method for CRM training.

**On No 2 (paragraph (a)(6)(ii) of AMC1 ORO.CC.115(e)):**

Noted. Please refer to the discussion on minimum training times in Chapter 2 of this CRD.

**On No 3 (paragraph (a)(5)(ii) of AMC1 ORO.FC.220):**

Partially accepted. After further discussion with the Review Group, the Agency decided to clarify the issue by explaining that the provisions for CRM trainers (AMC3 ORO.FC.115 and AMC3 ORO.CC.115(e)) are not applicable to trainers or instructors delivering training other than CRM training, but integrating CRM elements into this training (please refer to paragraph (a)(2)(ii) of AMC3 ORO.FC.115 and to paragraph (a)(2) of AMC3 ORO.CC.115(e)) of the associated Annex to Decision 2015/022/R.

**On No 4 (paragraph (a)(1) AMC1 ORO.CC.115(e)):**

Not accepted. Paragraph (a)(1) of AMC1 ORO.CC.115(e) is meant to introduce terms in a wider sense, not to prescribe specifics.

**On No 5 (paragraph (a)(6)(ii) of AMC1 ORO.CC.115(e)):**

Accepted. 'Annual' has been deleted.

**On No 6 (paragraph (a)(6)(ii) of AMC1 ORO.CC.115(e)):**



Not accepted. After further discussion, the Agency decided to delete the complete statement concerning a possible reduction in minimum training times.

**On No 7 (paragraph (b) of AMC1 ORO.CC.115(e)):**

Noted. Please refer to the discussion on minimum training times in Chapter 2 of this CRD.

**On No 8 (paragraph (e) (2) of AMC1 ORO.CC.115)):**

Noted. The subparagraph has been rephrased to make the objective of the training more clear.

**On No 9 (AMC1 ORO.CC.115(e)):**

Noted. Please refer to the discussion on the subject in Chapter 2 of this CRD.

**On No 10 (AMC1 ORO.CC.115(e)):**

Partially accepted. Please refer to the responses to the comments on paragraph (f) of AMC1.ORO.FC.115.

comment 399

comment by: Thomson Airways

AMC1 ORO.CC.115(e) (8)

We support the introduction of competency based training substituting compliance based training. For clarity propose the following wording at the end of this paragraph:

Where an competency based approach is substituted, the requirements of paragraph (g) do not apply.

AMC1 ORO.CC.115(e) (9)(b)

Propose delete the hours requirement specified in paragraph (2)

response Partially accepted.

**On paragraph (a)(8) of AMC1 ORO.CC.115(e):**

Not accepted. The paragraph contains the statement ‘...the compliance-based approach concerning CRM training may be substituted by a competency-based approach’. This statement gives the operator the choice. The operator can decide to which extent it wishes to use the provisions specified in paragraph (g).

**On paragraph (b)(2) of AMC1 ORO.CC.115(e):**

Noted. Please refer to the discussion on minimum training times in Chapter 2 of this CRD.

**3. Proposed amendments - 3.1. Draft Acceptable Means of Compliance (AMC) and Guidance Material (GM) (Draft Decisions) - 3.1.2. Air operations — Decision 2014/017/R (Part-ORO) - SUBPART CC — CABIN CREW - SECTION 1 — GENERAL REQUIREMENTS - AMC1 ORO.CC.115(e) Conduct of training courses and associated checking - (b)-(c)-(d)-(e)**

p. 46-47



comment

48

comment by: *Ryanair*

**(2) The course duration of the operator's CRM training should be a minimum of 8 hours.**

**Comment:**

Some Operators will recruit and train a CC through Initial training and Operator conversion training. In this case the proposed NPA imposes 'duplication' of training requirements when the Operator can show that the Operator specific CRM was covered in Initial Training. It must be possible to combine these two elements.

**Proposed text:**

(2) The course duration of the operator's CRM training should be a minimum of 8 hours. When the Operator is responsible for completion of Initial CRM Training as required in Annex V (Part CC) the Initial CRM Training and Operators CRM Training may be combined within one 8 hour period.

response

Not accepted.

If one looks closely at the column 'Operator's CRM training' of Table 1 of paragraph (g) of AMC1 ORO.CC.115(e), it becomes clear which training elements are required here, and which ones are not, since they are already 'covered under initial training required by Part-CC'.

comment

63

comment by: *DLH*

(e)(2) This paragraph is true, but this should be the result of the training and doesn't need to be demonstrated during the training.

response

Noted.

Please refer to the response to comment No 377 (covered under No 8).

comment

325

comment by: *IATA (Dragos Munteanu)*

**AMC1 ORO.CC.115(e) sub para (b)** Comment: IATA recommends EASA to delete the minimum course duration requirement of 8 hours.

Meeting the training objectives should be the main focus and not a specific prescriptive training time. The training requirement of an 8 hour CRM operator course deprives an operator to integrate CRM training in other initial training elements. Furthermore, an integrated CRM training of 8 hours is difficult to prove/demonstrate.



response

Noted.

Please refer to the discussion on minimum training times in Chapter 2 of this CRD.

comment

326

comment by: IATA (Dragos Munteanu)

**AMC1 ORO.CC.115(e) sub para (e) (2)**

This paragraph is a statement, the end result of the SCC training is to have a person being able to manage the operation, but this doesn't need to be demonstrated during the CRM training.

response

Noted.

Please refer to the response to comment No 377 (covered under No 8).

comment

378

comment by: AEA

**1. AMC1 ORO.CC.115(e) sub para (b)**

Comment: Delete the minimum course duration requirement of 8 hours.

Meeting the training objectives should be leading over training time. The training requirement of an 8 hour CRM operator course deprives an operator to integrate CRM training in other initial training elements. Furthermore, an integrated CRM training of 8 hours is difficult to prove/demonstrate.

**2. AMC1 ORO.CC.115(e) sub para (b)**

Comment: Delete the minimum course duration requirement of 8 hours.

Meeting the training objectives should be leading over training time. The training requirement of an 8 hour CRM operator course deprives an operator to integrate CRM training in other initial training elements.

Furthermore, an integrated CRM training of 8 hours is difficult to prove/demonstrate.

**3. AMC1 ORO.CC.115(e) sub para (e) (2)**

This paragraph is true, but this should be the result of the training and doesn't need to be demonstrated during the training.

**4. AMC1 ORO.CC.115(e)**

AEA does not support the fact that the only way to become CC CRM trainer is to be at least a former Cabin Crew or an experienced non Cabin Crew CRM trainer (grand fathering purposes).

The wording is not clear but the grandfathering purpose would apply if only former trainer could become trainer. This is not the case stated in AMC3 ORO.CC.115(e) (a)(2).



**5. AMC1 ORO.CC.115(e)**

See comment on AMC1.ORO.FC.115 sub para (f)

response

Partially accepted.

**On No 1 (paragraph (b) of AMC1 ORO.CC.115(e)):**

Noted. Please refer to the discussion on minimum training times in Chapter 2 of this CRD.

**On No 2 (paragraph (b) of AMC1 ORO.CC.115(e)):**

Noted. Please refer to the discussion on minimum training times in Chapter 2 of this CRD.

**On No 3 (paragraph (e) (2) of AMC1 ORO.CC.115)):**

Noted. Please refer to the response to comment No 377 (covered under No 8).

**On No 9 (AMC1 ORO.CC.115(e)):**

Noted. Please refer to the response to comment No 377 (covered under No 9).

**On No 10 (AMC1 ORO.CC.115(e)):**

Partially accepted. Please refer to the responses to the comments on paragraph (f) of AMC1.ORO.FC.115.

**3. Proposed amendments - 3.1. Draft Acceptable Means of Compliance (AMC) and Guidance Material (GM) (Draft Decisions) - 3.1.2. Air operations — Decision 2014/017/R (Part-ORO) - SUBPART CC — CABIN CREW - SECTION 1 — GENERAL REQUIREMENTS - AMC1 ORO.CC.115(e) Conduct of training courses and associated checking - (f) Training elements**

p. 47-48

comment

390

comment by: *European Transport Workers Federation - ETF*

Page 47 (f) Training Elements

Add from page 52 (b) (6) (i) (ii) to this section.

Page 48 (5) Case Studies

ETF supports this approach

response

Partially accepted.

**On paragraph (b)(6) of AMC2 ORO.CC.115(e) of the NPA (p. 52):**

Not accepted. 'Effective communication and coordination' is included in Table 1 of paragraph (g) of AMC1 ORO.CC.115(e). No further explanation is needed. Paragraph (f) of AMC1 ORO.CC.115(e) only contains training elements where further explanation is needed.

**On paragraph (f)(5) of AMC1 ORO.CC.115(e) of the NPA (p. 48):**

Noted. The support of ETF is appreciated.



comment 49

comment by: Ryanair

**(g) CRM training syllabus TABLE 1 - Cabin Crew CRM Training****(1) Resilience development, and****(2) Surprise and startle effect****Comment:**

Inclusion of these two areas into **Cabin Crew training** is an over-enthusiastic decision falling out of recent safety recommendations for FlightCrew (specifically Pilots). It is not necessary to impose these onto Cabin crew training elements. There is no benefit including these into CC training where time can be used to train CC in areas that are more aligned to CC functions and CC specific challenges.

Furthermore the impossibility of introducing regular and frequent repetitive exercises that genuinely provide a 'startle effect' in this training environment is both unrealistic and impracticable.

**Proposed text:****(f) Training elements**

The CRM training elements to be covered are specified in Table 1 of paragraph (g). The operator should ensure that the following aspects are addressed:

**(1) Resilience development**

~~CRM training should address the main aspects of resilience development. The training should cover:~~

~~**(i) Mental flexibility**~~

~~Cabin crew should be trained to:~~

~~(A) understand that mental flexibility is necessary to recognise critical changes;~~

~~(B) reflect on their judgement and adjust it to the unique situation;~~

~~(C) avoid fixed prejudices and over-reliance on standard solutions; and~~

~~(D) remain open to changing assumptions and perceptions.~~

~~**(ii) Performance adaptation**~~

~~Cabin crew should be trained to:~~

~~(A) mitigate frozen behaviours, overreactions and inappropriate hesitation; and~~

~~(B) adjust actions in accordance with the current conditions.~~

**(2) Surprise and startle effect**

~~CRM training should address unexpected, unusual and stressful situations including interruptions and distractions. Therefore, CRM training should be designed to prepare cabin crew to master sudden events and associated uncontrolled reactions.~~

**(3) Cultural differences**

response Not accepted.  
The Agency, after further discussion with the Review Group, decided to keep both training elements (i.e. resilience development and surprise and startle effect) for cabin crew.

comment 64 comment by: DLH  
see comment 56

response Partially accepted.  
Please refer to the responses to comment No 56.

comment 271 comment by: ATF - Awareness Training Fakoussa  
  
Skip resilience completely. Although its become a fashion word and sounds very scientific, it is covered already in stress coping and has been covered since crm exists. Unfortunately stress coping did not achieve the success as expected, which is understandable, as it cannot be controlled through knowledge. Adding now another knowledge based word and training objective does not make any sense.  
  
Better improve the quality of the CRM instructor/trainer to be able to incorporate practical stress coping techniques and then resilience is the natural result.  
  
Also skip startle effect as it is covered in stress coping

response Not accepted.  
Please refer to the discussion on resilience development in Chapter 2 of this CRD.

comment 272 comment by: ATF - Awareness Training Fakoussa  
  
(i) CRM training should cover aircraft type-specific case studies, based on the information available within the operator's management system, including:  
like this it looks as if case studies have to be from aviation only and from the operator only..  
suggestion  
  
(i) CRM training should cover aircraft type-specific case studies as well as any other incident or accident from traffic on the road, on water, in power stations etc. and special emphasis should be given to the information available within the operator's management system, including:



response

Not accepted.

The Agency does not see the need to highlight case studies related to traffic on the road, on water, in power stations, etc. Nevertheless, the operator may decide to include non-aviation-related case studies in its training, as appropriate.

comment

282

comment by: *Luftfahrt-Bundesamt*

**AMC1 ORO.CC.115(e) Conduct of training courses and associated checking**  
**CREW RESOURCE MANAGEMENT (CRM) TRAINING — MULTI CABIN CREW OPERATIONS**

(a) General

(5) Integration into cabin crew training

CRM principles should be integrated into relevant parts of cabin crew training and operations, including checklists, briefings and emergency procedures.

**No 1: Does this mean that all cabin trainers have to obtain a CRM trainer qualification or at least have to attend training courses for HPL?**

(6) Combined CRM training for flight crew and cabin crew

(i) Operators should provide combined training for flight crew and cabin crew during the annual recurrent training.

(ii) The combined training should be a minimum of 8 hours over a period of 3 years. The minimum hours may be reduced when evidenced by the operator's management system, i.e. when the operational data collected and analysed demonstrate faultless cooperation and coordination among crew members.

**No 2: Evidence based on the management system/analysis is hardly verifiable. It is to be supposed that the NAAs will apply different criteria and supervision based on compliance with minimum hours will be much easier.**

**No 3: Does '8 hours over a period of 3 years' mean 8 hours in three years or 24 hours in three years?**

(iii) The combined training should address at least:

(A) Effective communication, coordination of tasks and functions of flight crew and cabin crew; and

(B) Mixed multinational and cross-cultural flight crew and cabin crew, and their interaction, if applicable.

(iv) There should be an effective liaison between flight crew and cabin crew training departments. Provision should be made for transfer of relevant knowledge and skills between flight crew and cabin crew CRM trainers.

**No 4: As many smaller operators may have only one training department responsible both for flight crew training and for cabin crew training we would like to propose to delete the word "departments": "There should be ... between flight crew and cabin crew training."**

...



(9) Contracted CRM training

In case of contracted CRM training, the operator should ensure that the content of the course meets the specific culture, the type of operations and the associated procedures of the operator. When crew members from several operators attend the same course, CRM core elements should be specific to the relevant flight operations and to the trainees concerned.

**No 5: How will it be ensured that all operator specific items are dealt with if CAs of different operators participate in the same course? The items will have to be prepared in such a way that general items applicable to all operators as well as all operator specific items are addressed.**

...

(f) Training elements

...

(7) Case studies

(i) CRM training should cover aircraft type-specific case studies, based on the information available within the operator’s management system, including:

(A) accident and serious incident reviews to analyse and identify any associated non-technical causal and contributory factors, and instances or examples of a lack of CRM; and

(B) analysis of occurrences that were well managed.

(ii) If relevant aircraft type-specific or operator-specific case studies are not available, the operator should consider other case studies relevant to the scale and scope of its operations.

**No 6: In order to identify error-prone behavioural patterns it may be advantageous to select and analyse non-aviation-related occurrences case studies.**

(g) CRM training syllabus

...

Table 1 — Cabin crew CRM training

CRM training elements	Operator’s CRM training	Operator aircraft type conversion training	Annual recurrent training	Senior cabin crew member (SCCM) course
...				
Relevant to the entire aircraft crew				



<p>Shared situation awareness, shared information acquisition and processing;</p> <p>Workload management;</p> <p>Effective communication and coordination between all crew members including the flight crew as well as inexperienced cabin crew members;</p> <p>Leadership, cooperation, synergy, delegation, decision-making, actions;</p> <p>Resilience development;</p> <p>Surprise and startle effect;</p> <p>Cultural differences;</p> <p>Identification and management of the passenger human factors: crowd control, passenger stress, conflict management, medical factors.</p>	<p>In-depth</p>	<p>Required (when relevant to the type(s))</p>	<p>Required (3 year cycle)</p>	<p>In-depth</p>
<p>Specifics related to aircraft types (narrow/wide bodied, single/multi-deck), flight crew and cabin crew composition and number of passengers</p>	<p>Required In-depth</p>	<p>In-depth</p>	<p>Required (3 year cycle)</p>	<p>In-depth</p>

response

Partially accepted.

On No 1 ('Does this mean that all cabin trainers have to obtain a CRM trainer qualification or at least have to attend training courses for HPL?'):

Noted. No, not exactly. Please refer to paragraph (a)(4) of AMC3 ORO.CC.115(e) of the NPA which contains provisions for trainers or instructors who are integrating CRM elements into the cabin crew training.

On No 2 ('Evidence based on the management system/analysis is hardly verifiable. It is to be supposed that the NAAs will apply different criteria and supervision based on compliance with minimum hours will be much easier.')

Noted. The competent authority has to approve the training plans of the operator and to set up criteria for doing so. It has to be noted that the text has been amended considering other comments on this issue.

On No 3 ('Does '8 hours over a period of 3 years' mean 8 hours in three years or 24 hours in three years?'):

Noted: 8 hours in 3 years.



On No 4 ('As many smaller operators may have only one training department responsible both for flight crew training and for cabin crew training we would like to propose to delete the word "departments": "There should be ... between flight crew and cabin crew training."'):

Not accepted. The change proposed by LBA might lead to a misunderstanding concerning the content of the liaison. The Agency prefers to keep the original wording. If there is only one training department, it is self-explanatory that the liaison should be between the different persons within this department. If there is only one person responsible, it is obvious that the liaison does not apply.

On No 5 ('How will it be ensured that all operator specific items are dealt with if CAs of different operators participate in the same course? The items will have to be prepared in such a way that general items applicable to all operators as well as all operator specific items are addressed.')

Noted. As the provision says, it is the responsibility of the operator. And the competent authority, via the operator, has the oversight and has to approve the training plans.

On No 6 ('In order to identify error-prone behavioural patterns it may be advantageous to select and analyse non-aviation-related occurrences case studies.')

Noted. In general terms, this is correct. However, the Agency decided not to mention this explicitly, but to leave it to the operator to also choose non-aviation-related case studies, as appropriate.

On No 7 ('In-depth' instead of 'Required'):

Not accepted. The Agency, based on the input received during the drafting of the NPA, came to the conclusion that 'required' is sufficient for the operator's CRM training.

comment

339

comment by: IATA (Dragos Munteanu)

AMC 1 ORO.CC.115(e)(f) (2)

Training with real surprise and startle effect is difficult to achieve since there has to be a standardized syllabus for all training programs, and these will become transparent to Cabin Crews.

response

Noted.

The Agency agrees that it is difficult to establish training with real surprise and startle effect. Therefore, the main goal of such training is to raise awareness and to ensure that cabin crew is better prepared when facing real surprise and startle effects.



**Material (GM) (Draft Decisions) - 3.1.2. Air operations — Decision 2014/017/R (Part-ORO) -  
SUBPART CC — CABIN CREW - SECTION 1 — GENERAL REQUIREMENTS - AMC1 ORO.CC.115(e)  
Conduct of training courses and associated checking - (g) CRM training syllabus**

comment 65 comment by: DLH

see comment 56

response Partially accepted.  
Please refer to the responses to comment No 56.

comment 273 comment by: ATF - Awareness Training Fakoussa

Attachment [#2](#)

skip that table 1 completely and use the PRM table, that is attached here again and is usable for flight and cabin and maintenance and CEOs and thus keeping the idea of joint trainings practically visible.

response Not accepted.  
The Agency decided to keep Table 1 of paragraph (g) of AMC1 ORO.CC.115(e) of the NPA.

comment 391 comment by: European Transport Workers Federation - ETF

Page 50 Table 1

Relevant to the operator and the organisation

Column 2, 1st text box (operator's safety culture) should be in-depth

response Not accepted.  
The Agency is of the opinion that 'required (when relevant to the type(s)) is sufficient for the 'operator aircraft type conversion training'.

**3. Proposed amendments - 3.1. Draft Acceptable Means of Compliance (AMC) and Guidance  
Material (GM) (Draft Decisions) - 3.1.2. Air operations — Decision 2014/017/R (Part-ORO) -**

p. 51-52



**SUBPART CC — CABIN CREW - SECTION 1 — GENERAL REQUIREMENTS - AMC2 ORO.CC.115(e)**  
**Conduct of training courses and associated checking**

comment

comment by:

274

ATF - Awareness Training Fakoussa

276

ATF - Awareness Training Fakoussa

Skip resilience completely. Although its become a fashion word and sounds very scientific, it is covered already in stress coping and has been covered since crm exists. Unfortunately stress coping did not achieve the success as expected, which is understandable, as it cannot be controlled through knowledge. Adding now another knowledge based word and training objective does not make any sense.

Better improve the quality of the CRM instructor/trainer to be able to incorporate practical stress coping techniques and then resilience is the natural result.

Also skip startle effect as it is covered in stress coping

response

Not accepted.

Please refer to the discussion on resilience development in Chapter 2 of this CRD.

comment

275

comment by: ATF - Awareness Training Fakoussa

Basically the amount of passengers or one or more cabin crew cannot have an influence on safety. Safety is not the product of a crew, but of the single member of a crew. If we see PRM – personal resource management as foundation also for single crew, they should actually have MORE hours, as their job being alone, requires even more stress coping techniques. But I accept that economic constraints might hinder EASA to be strict on that subject. But it is not a decision for more safety to reduce the amount of training.

To ask in such a s short time for resilience development and this useless surprise and startle effect is also impossible. Please replace these two terms by stress coping techniques and that alone is a 2-3hours training.

Also CBT stand alone as a tool for resilience development is an impossibility and even for stress coping techniques far to theoretical and would have no effect. That is purely tick a box.

response

Not accepted.

Please refer to the discussion on resilience development and on the surprise and startle effect in Chapter 2 of this CRD.



comment

283

comment by: *Luftfahrt-Bundesamt***AMC2 ORO.CC.115(e) Conduct of training courses and associated checking****CREW RESOURCE MANAGEMENT (CRM) TRAINING — SINGLE CABIN CREW OPERATIONS**

For single cabin crew operations, AMC1 ORO.CC.115(e) should be applied with the following differences:

**(a) Operator's CRM training**

Notwithstanding paragraph (b) of AMC1 ORO.CC.115(e), the course duration of the operator's CRM training should be a minimum of 4 hours for aircraft with a maximum operational passenger seating configuration of 19 or less.

**No 1: Does this provision imply that large aircraft with a maximum seating capacity of more than 50 seats, but with a maximum operational passenger seating configuration of 19 or less have always to be operated with at least one cabin crew member or does this provision refer only to the training of a single cabin crew assigned on a voluntary basis?**

**No 2: Which provisions apply to single CC on a/c with a MOPSC > 19 but < 50 passengers seats?**

**(b) Relevant training elements**

CRM training should focus on the elements specified in Table 1 of paragraph (g) of AMC1 ORO.CC.115(e) which are relevant to single cabin crew operations. Therefore, single cabin crew CRM training should include, among others:

- (1) situation awareness;
- (2) workload management;
- (3) decision-making;
- (4) resilience development;
- (5) surprise and startle effect; and
- (6) effective communication and coordination with
  - (i) the flight crew; and
  - (ii) other operational personnel and ground services.

**(c) Computer-based training**

Notwithstanding paragraph (a)(3) of AMC1 ORO.CC.115(e), computer-based training may be conducted as a stand-alone training method for aircraft with a maximum operational passenger seating configuration of 19 or less.

**No 3: Computer Based Training as stand-alone training should not be considered acceptable for CRM, irrespective of whether single cabin crew or multi-cabin crew operation is concerned.**

response

Partially accepted.

On No 1: Noted. The latter. This provision refers to the training of a single cabin crew



assigned on a voluntary basis.

On No 2: Noted. For a (voluntary) single cabin crew, the provisions of paragraph (b) of AMC1 ORO.FC.115(e) of the NPA apply, namely a minimum of 8 hours for the operator's CRM training is required. Please refer also to the discussion on minimum training hours in Chapter 2 of this CRD, and note that '8 hours' has been amended to '6 training hours' in the associated Decision 2015/022/R.

On No 3: Not accepted. Please refer to the discussion on computer-based training in Chapter 2 of this CRD.

**3. Proposed amendments - 3.1. Draft Acceptable Means of Compliance (AMC) and Guidance Material (GM) (Draft Decisions) - 3.1.2. Air operations — Decision 2014/017/R (Part-ORO) - SUBPART CC — CABIN CREW - SECTION 1 — GENERAL REQUIREMENTS - AMC3 ORO.CC.115(e) Conduct of training courses and associated checking**

p. 52-54

comment 12

comment by: *Stefano Cignoni*

**(2) The cabin crew CRM trainer, in order to be suitably qualified, should:**

**(i) have appropriate experience of the relevant flight operations as a cabin crew member;**

Here is well specified that a Cabin Crew CRM Trainer must have appropriate experience as a cabin crew member. In the Flight Crew CRM Trainer instead is not. It must be: **have appropriate experience of the relevant flight operations as a flight crew member**

(see previous comment)

response

Noted.

Please refer to the discussion on the subject in Chapter 2 of this CRD.

comment 17

comment by: *Alitalia*

Question: why the Cabin Crew CRM Trainer, in order to be suitably qualified, should have appropriate experience as cabin crew member whereas for the Flight Crew CRM Trainer such experience is only preferable?

response

Noted.

Please refer to the discussion on the subject in Chapter 2 of this CRD.



comment 24

comment by: Federal Office of Civil Aviation FOCA

AMC3 ORO.CC.115(e) - Conduct of training courses and associated checking

Subtitle "~~AND CABIN CREW CRM TRAINER EXAMINER~~", (e) to be deleted;

(b)(5), (c)(2), (d) to be changed as follows:

(b)(5) The training of cabin crew CRM trainers should be conducted by cabin crew CRM trainers with a minimum of 3 years' experience ~~or by cabin crew CRM trainer examiners~~. Assistance may be provided by experts in order to address specific areas.

(c)(2) A cabin crew CRM trainer should be assessed by ~~a cabin crew CRM trainer examiner~~ an experienced CRM trainer, nominated by the operator, when conducting the first CRM training

~~course. This first assessment should be valid for a period of 3 years.~~

(d) Recency and renewal of qualification as cabin crew CRM trainer

(1) For recency ~~of the 3-year validity period~~, the cabin crew CRM trainer should:

(i) conduct at least 2 CRM training events in any 12-month period;

(ii) be assessed within the last 12 months of ~~the a 3-year validity period~~ by an experienced cabin crew CRM trainer ~~examiner~~, nominated by the operator; and

(iii) receive a cabin crew CRM trainer refresher training within ~~the a 3-year validity period~~.

~~(2) The next 3-year validity period should start at the end of the previous period.~~

~~(3)~~ (2) For renewal, i.e. when a cabin CRM trainer does not fulfil the provisions of paragraph (1), he/she should, before resuming as cabin crew CRM trainer:

(i) comply with the qualification provisions of paragraphs (a) and (c); and

(ii) receive a cabin crew CRM trainer refresher training.

~~(e) Cabin crew CRM trainer examiner~~

~~(1) For assessing cabin crew CRM trainers, the operator should nominate qualified cabin crew CRM trainers to act as cabin crew CRM trainer examiners. This personnel should demonstrate recent and relevant knowledge and background, and a minimum of 3 years' experience as cabin crew CRM trainer.~~

~~(2) An operator which does not have the resources to conduct the assessment as described should employ a contractor. The standard of these external cabin crew CRM trainer examiners should be confirmed on a 3-year basis by the operator.~~

~~(3) Continued suitability in the role of a cabin crew CRM trainer examiner should be subject to the following provisions:~~

~~(i) The examiner should demonstrate continued compliance with the provisions for a cabin crew CRM trainer and should demonstrate capability in that role.~~

~~(ii) The examiner should have conducted at least 2 cabin crew CRM trainer assessments in any 12-month period.~~

~~(iii) The examiner should be observed by the operator every 3 years when conducting an assessment of a cabin crew CRM trainer.~~



~~(4) For renewal, i.e. when the examiner has not maintained activity in the role as described in paragraph (3), he/she should comply with the provisions of paragraph (c), before resuming activities as examiner.~~

Justification: FOCA considers the function of “cabin crew CRM trainer examiner” as unnecessary, too prescriptive and therefore burdensome. In this respect, it is sufficient if experienced CRM trainers who have obtained respective training (assessment of applied CRM training and assessment of trainers) assess “CRM training” and other CRM trainers .

response

Partially accepted.

After further discussion, the Agency decided to delete completely the draft AMC for CRM trainer examiners. Instead, the responsibility of the operator for the assessment and monitoring of CRM trainers is emphasised in the AMC, and GM is introduced suggesting that the assessment of CRM trainers is conducted by experienced CRM trainers.

comment

38

comment by: UK CAA

**Page No:** 54**Paragraph No:** (e) Cabin crew CRM trainer examiner, sub-paragraph (4)

**Comment:** The requirements stated in paragraph (c) do not appear to be in context with the requirements for when the examiner can resume activities as an examiner in the event that he/she has not maintained activity in the role as described in paragraph (3).

**Justification:** Paragraph (c) refers to the process to be followed for the assessment of a cabin crew CRM trainer and for when conducting the first CRM training course.

**Proposed Text:** “For renewal, i.e. when the examiner has not maintained activity in the role as described in paragraph (3), he/she should ~~comply with the provisions of paragraph (c),~~ **be observed by the operator** before resuming activities as examiner.”

response

Noted.

After further discussion, the Agency decided to delete completely the draft AMC for CRM trainer examiners. Instead, the responsibility of the operator for the assessment and monitoring of CRM trainers is emphasised in the AMC, and GM is introduced suggesting that the assessment of CRM trainers is conducted by experienced CRM trainers.

comment

50

comment by: Ryanair

**(4) The refresher training of cabin crew CRM trainers****Comment:**

The requirement of 8 hours here is considered to be excessive for refresher training especially if the instructor has been actively training CRM and active in an operational



capacity.

**Proposed text:**

(4) The refresher training of flight crew CRM trainers should be assessed by the Head of Training and should be based on the Instructor's recent instructing experience and operational status and will: (i) be a minimum of 4 hours; and (ii) include new methodologies, procedures and lessons learned, where relevant.

response

Partially accepted.

On (b)(4) of AMC 3ORO.CC.115(e):

Not accepted. The term 'head of training' should be avoided since it implies a certain structure within the operator's organisation. It is expected that the wording 'recent instructing experience and operational status' would raise concerns as it is too vague.

On (b)(4)(i) of AMC 3ORO.CC.115(e):

Noted. Please refer to the discussion on minimum training times in Chapter 2 of this CRD.

On (c)(4)(ii) of AMC 3ORO.CC.115(e):

Not accepted: The Agency tries to avoid phrases such as 'where relevant' in its rules since they are criticised as being too vague.

comment

51

comment by: Ryanair

**(e) Cabin crew CRM trainer examiner**

(1) For assessing cabin crew CRM trainers....

**Comment:**

For some operators the restriction of 'a minimum of 3 years experience as CC CRM Trainer' is excessive. An operator should be able to nominate qualified CC Examiners to act as CRM Trainer Examiners. There is no restriction on a CC Instructor becoming a CC Examiner at the present time. Examiners have already obtained a higher level of qualification and are capable to act in that capacity in other areas such as CC Safety and Emergency procedures Examiner. They already hold a post of responsibility and are suitably qualified to meet the requirements for CRM Trainer Examiner once they have demonstrated to the operator that they have the relevant knowledge.

**Proposed text:**

(e) Cabin crew CRM trainer examiner

(1) For assessing cabin crew CRM trainers, the operator should nominate qualified cabin crew CRM trainers to act as cabin crew CRM trainer examiners. This personnel should demonstrate recent and relevant knowledge, background and experience. ~~and a minimum of 3 years' experience as cabin crew CRM trainer.~~

response

Partially accepted.

After further discussion, the Agency decided to delete completely the draft AMC for CRM



trainer examiners. Instead, the responsibility of the operator for the assessment and monitoring of CRM trainers is emphasised in the AMC, and GM is introduced suggesting that the assessment of CRM trainers is conducted by experienced CRM trainers. It is further suggested in the GM that these experienced CRM trainers should have been trainers for at least 3 years.

comment

66

comment by: DLH

see comment 59

response

Noted.

Please refer to the discussion on minimum training times in Chapter 2 of this CRD.

comment

277

comment by: ATF - Awareness Training Fakoussa

That is leaning very heavily towards very big operators. For small operators a very complicated process that would require many very well trained specialists outside of the big operators. To implement here a top quality training for small operators is not possible without a combined effort of business and general aviation. If this is not the last NPA, EASA should rethink this part completely as one target was to have cabin plus pilots plus maintenance and hopefully plus the CEO and his management in one class. So any accepted instructor/trainer should be able and trained to fulfill that task.

The continuously repeated requirement to be type of aircraft related is NOT human factors. The errors etc. of TEM appear in all kinds of conditions and in all work areas. That is why the medical work tries to copy the useless parts of CRM, thinking that from now on, there are no more errors or slips or lack of awareness. Just the same as we did in aviation and now have to check why CRM did not have the expected big bang effect.

response

Noted.

Please note that the (small) operator may outsource the CRM training (see paragraph (a)(9) of AMC1 ORO.FC.115(e) of the NPA).

comment

284

comment by: Luftfahrt-Bundesamt

**AMC3 ORO.CC.115(e) Conduct of training courses and associated checking**

**CABIN CREW CRM TRAINER AND CABIN CREW CRM TRAINER EXAMINER**

(a) Qualification of cabin crew CRM trainer



...

(3) An experienced non-cabin crew CRM trainer may become a cabin crew CRM trainer, provided that he/she fulfils the provisions specified in paragraphs (2)(ii) to (2)(vi) and demonstrates a satisfactory knowledge of the relevant flight operations and the cabin crew working environment.

The term 'experienced non-cabin CRM trainer' is quite vague. Experience in this case should have been gathered on a certain number of flights as an additional cabin crew member.

response

Noted.

Experience could also have been gained, e.g. as a flight crew CRM trainer.

comment

327

comment by: IATA (Dragos Munteanu)

IATA considers that the Operator should be in the best position to select the appropriate qualification for a CRM Cabin Crew Trainer.

As the proposal is written the only way to become CC CRM trainer is to be at least a former Cabin Crew or an experienced non Cabin Crew CRM trainer (grand fathering purposes). As a consequence, it is desirable to give the possibility for new ground staff entrants to gain CRM expertise through specific training and to become Cabin Crew CRM trainer.

response

Noted.

Please refer to the discussion on the subject in Chapter 2 of this CRD.

comment

330

comment by: IATA (Dragos Munteanu)

**AMC3 ORO.CC.115(e) sub para (b)(2)**

Comment: We recommend EASA to delete the minimum course duration requirements (24 or 40 hours).

Meeting the training objectives should prevail over training time. A minimum course duration requirement for basic training (24 or 40 hours) is too specific. The requirement should be that all CRM trainers should meet a quality norm and/or pass an exam. Furthermore, there should be a possibility to take into account previous related CRM experience in other airline/profession (medical, police).

response

Noted.

Please refer to the discussion on minimum training times in Chapter 2 of this CRD.



comment 331 comment by: IATA (Dragos Munteanu)

**AMC3 ORO.CC.115(e) sub para (b)(4)**

Comment: IATA recommends EASA to delete the minimum course duration requirement of 8 hours.

Refresher training should be based on operator analyses on company safety, trainers' (or trainer group) performance, feedback on training and new developments. A duration of a course of 8 Hours is too specific and not performance based.

response Noted.

Please refer to the discussion on minimum training times in Chapter 2 of this CRD.

comment 332 comment by: IATA (Dragos Munteanu)

**AMC3 ORO.CC.115(e) sub para (b)(5)**

Comment: We consider there should be an alternative to train CRM examiners. The alternative of a minimum CRM training experience of 3 years is too strict. It could be preferably 1 year and competence based requirements.

Furthermore, there should be a possibility to take into account previous related CRM experience in other airline/profession.

response Noted.

Please refer to the response to comment No 379 (covered under No 4).

comment 379 comment by: AEA

**1. AMC3 ORO.CC.115(e)**

See comment on AMC3.ORO.FC.115

**2. AMC3 ORO.CC.115(e) sub para (b)(2)**

Comment: Delete the minimum course duration requirements (24 or 40 hours). Meeting the training objectives should prevail over training time. A minimum course duration requirement for basic training (24 or 40 hours) is too specific. The requirement should be that all CRM trainers should meet a quality norm and/or pass an exam. Furthermore, there should be a possibility to take into account previous related CRM experience in other airline/profession (medical, police).

**3. AMC3 ORO.CC.115(e) sub para (b)(4)**

Comment: Delete the minimum course duration requirement of 8 hours.



	<p>Refresher training should be based on operator analyses on company safety, trainers' (or trainer group) performance, feedback on training and new developments.</p> <p>8 Hours is too specific.</p> <p><b>4. AMC3 ORO.CC.115(e) sub para (b)(5)</b></p> <p>Comment: There should be an alternative to train CRM examiners. The alternative of a minimum CRM training experience of 3 years is too strict. Preferably 1 year and competence based requirements.</p> <p>Furthermore, there should be a possibility to take into account previous related CRM experience in other airline/profession (medical, police).</p>
response	<p>Partially accepted.</p> <p><b>On No 1 (AMC3 ORO.CC.115(e)):</b></p> <p>Noted. Please refer to the response to comment No 371 on AMC3.ORO.FC.115, and to the discussion on minimum training times in Chapter 2 of this CRD.</p> <p><b>On No 2 (paragraph (b)(2) of AMC3 ORO.CC.115(e)):</b></p> <p>Noted. Please refer to the discussion on minimum training times in Chapter 2 of this CRD.</p> <p><b>On No 3 (paragraph (b)(4) of AMC3 ORO.CC.115(e)):</b></p> <p>Noted. Please refer to the discussion on minimum training times in Chapter 2 of this CRD.</p> <p><b>On No 4 (paragraph (b)(5) of AMC3 ORO.CC.115(e)):</b></p> <p>Partially accepted. After further discussion, the Agency decided to delete completely the draft AMC for CRM trainer examiners. Instead, the responsibility of the operator for the assessment and monitoring of CRM trainers is emphasised in the AMC, and GM is introduced suggesting that the assessment of CRM trainers is conducted by experienced CRM trainers. It is further suggested in the GM, however, that these experienced CRM trainers should have been trainers for at least 3 years.</p>
comment	<p>400 <span style="float: right;">comment by: Thomson Airways</span></p> <p>AMC3 ORO.CC.115(e) (b)</p> <p>Propose delete the hours requirements specified in paragraph (2). Training should be based on proficiency, not hours in the classroom.</p>
response	<p>Noted.</p> <p>Please refer to the discussion on minimum training times in Chapter 2 of this CRD.</p>



**SUBPART CC — CABIN CREW - SECTION 1 — GENERAL REQUIREMENTS - GM1 ORO.CC.115(e)  
Conduct of training courses and associated checking**

comment 401

comment by: Thomson Airways

AMC3 ORO.CC.115(e) (d) (iii)

This paragraph implies that one (singular) refresher training event must occur over the 3 year validity period. Propose that the word "a" is deleted, so that refresher training totalling 8 hours could be completed in small chunks. Also propose that the words "cabin crew" are deleted such that the refresher training could be completed with flight crew. Wording therefore:

(iii) receive CRM trainer refresher training with the 3-year validity period.

AMC3 ORO.CC.115 (e) (d) (3)(ii)

Propose that this paragraph is deleted. If the CRM trainer is assessed as competent under paragraphs (a) and (c) why do they need refresher training?

response Partially accepted.

**On paragraph (d)(1)(iii) of AMC3 ORO.CC.115(e):**

Accepted. The text has been amended accordingly.

**On paragraph (d)(3)(ii) of AMC3 ORO.CC.115(e):**

Not accepted. If this paragraph is deleted, the CRM trainer could avoid the refresher training. However, the intention is to render refresher training mandatory.

**3. Proposed amendments - 3.1. Draft Acceptable Means of Compliance (AMC) and Guidance Material (GM) (Draft Decisions) - 3.1.2. Air operations — Decision 2014/017/R (Part-ORO) - SUBPART CC — CABIN CREW - SECTION 1 — GENERAL REQUIREMENTS - GM2 ORO.CC.115(e) Crew resource management (CRM) training**

p. 55-56

comment 25

comment by: Federal Office of Civil Aviation FOCA

GM3 ORO.FC.115 Crew resource management (CRM) training

DESIGN, DELIVERY AND EVALUATION OF CRM TRAINING

The checklist in Table 1 provides guidance on the design, delivery and evaluation of CRM training, and on their incorporation into the operator's safety culture. Elements of the operator's management systems and the competency-based approach are incorporated in the checklist.



FOCA suggests to add the following requirement:

An evaluation of the CRM training programme according Table 1, including the CRM skills assessment system and the assessment of an operator's CRM trainers should be done at least every 3 years.

response Not accepted.

This guidance is meant to support the operator's activities. As such, the intention of the GM is not to establish additional 'rules'.

comment 84

comment by: FAA

Page 56. The checklist uses the words "evaluation" and "measurement" in a way that seems somewhat inconsistent with the clear message of limiting CRM observations to "assessment" only.

response Noted.

The Agency avoided using the term 'assessment' since within the overall CRM concept this term should be 'reserved' to be used for the related crew members' assessment.

**3. Proposed amendments - 3.1. Draft Acceptable Means of Compliance (AMC) and Guidance Material (GM) (Draft Decisions) - 3.1.2. Air operations — Decision 2014/017/R (Part-ORO) - SUBPART CC — CABIN CREW - SECTION 1 — GENERAL REQUIREMENTS - GM3 ORO.CC.115(e) Crew resource management (CRM) training**

p. 56-57

comment 278

comment by: ATF - Awareness Training Fakoussa

Skip resilience and skip mental flexibility and skip mitigation of frozen behavior (startle effect). Ask football coaches, sport trainers, driving instructors or think about your first PPL flight lessons..... how often were you "paralyzed" and would not have survived without your FI taking over or asking you to let go of the controls. And such basic genetic behaviour is to be treated in a classroom to be afterwards non existent?

Operators are wasting their money for this kind of not functioning theories.

response Not accepted.

Please refer to the discussion on resilience development and on the surprise and startle effect in Chapter 2 of this CRD.



**3. Proposed amendments - 3.1. Draft Acceptable Means of Compliance (AMC) and Guidance Material (GM) (Draft Decisions) - 3.1.2. Air operations — Decision 2014/017/R (Part-ORO) - SUBPART CC — CABIN CREW - SECTION 1 — GENERAL REQUIREMENTS - GM4 ORO.CC.115(e) Conduct of training courses and associated checking**

p. 57-58

comment

26

comment by: *Federal Office of Civil Aviation FOCA*

GM4 ORO.CC.115 (e) - Conduct of training courses and associated checking

In line with our comments on AMC3 ORO.FC.115 and AMC3 ORO.CC.115 on the crew CRM trainer examiner we suggest the following rewording of GM4 ORO.CC.115 (e): The checklist in Table 1 provides guidance on the assessment of a cabin crew CRM trainer. If a cabin crew CRM trainer is competent in his/her role, the response to the questions in Table 1 should be 'yes'. The cabin crew CRM trainer assessor (experienced CRM trainer, nominated by the operator) examiner, when answering the questions in Table 1, should provide reasons and should give examples related to the responses given.

response

Noted.

After further discussion, the Agency decided to delete completely the draft AMC for CRM trainer examiners. Instead, the responsibility of the operator for the assessment and monitoring of CRM trainers is emphasised in the AMC, and GM is introduced suggesting that the assessment of CRM trainers is conducted by experienced CRM trainers.

comment

381

comment by: *AEA*

**GM4 ORO.CC.115 (e)**

See comment on AMC1.ORO.FC220 (a). CC CRM trainers are not supposed to give technical training.

response

Accepted.

The text has been amended accordingly.

**3. Proposed amendments - 3.1. Draft Acceptable Means of Compliance (AMC) and Guidance Material (GM) (Draft Decisions) - 3.1.2. Air operations — Decision 2014/017/R (Part-ORO) - SUBPART CC — CABIN CREW - SECTION 1 — GENERAL REQUIREMENTS - AMC1 ORO.CC.125(d) Aircraft type-specific training and operator conversion training**

p. 58-59



comment	67  see comment 60	comment by: <i>DLH</i>
response	Noted. Please refer to the response to comment No 60.	

comment	238	comment by: <i>ECOGAS/SVFB/SAMA</i>
	<p>If here with technical crew training, members of the flight crew are addressed, we do not comment. But it should be clarified, that maintenance crew as long as they are not integral part of the flight crew are not addressed.</p> <p>Furthermore, SME's should not be addressed at all in respect to maintenance.</p> <p>The WG consisted of the following reps:</p> <p>ELFAA ETF ECA IACA EHAC CAA Sweden ASD ECA AEA CAA UK</p> <p>ECOGAS is not blaming this on EASA but there is no doubt that the proposal reflects the world of major organisations and does not take into account SME's</p>	
response	Noted. Concerning maintenance and maintenance crew, there must be a misunderstanding. The proposed provisions do not include neither maintenance nor maintenance crew.	

**3. Proposed amendments - 3.1. Draft Acceptable Means of Compliance (AMC) and Guidance Material (GM) (Draft Decisions) - 3.1.2. Air operations — Decision 2014/017/R (Part-ORO) - SUBPART CC — CABIN CREW - SECTION 1 — GENERAL REQUIREMENTS - AMC1 ORO.CC.140 Recurrent training** p. 59

comment	68  382	comment by:  DLH AEA
---------	---------------	-------------------------------



**AMC1 ORO.CC 140 sub para (a) (ii)**

(ii) This paragraph is very useful. It is missing in FC and should be added there as well.

response

Not accepted.

The statement that ‘the definition and implementation of the CRM training programme should be managed by a cabin crew CRM trainer’ refers to recurrent training only. The Agency decided not to include such a statement for flight crew recurrent training since it would limit the flexibility of the operator.

comment

279

comment by: *ATF - Awareness Training Fakoussa*

In all recurrent trainings (pilot/cabin/maint.) elements of CRM have to be addressed by the trainer and MUST be included in the otherwise technical training. From my experience, there is a minority of about 20% of FI/TRI/CC and cabin trainers that actually have the skills and abilities to do so. The required training to become a FI/TRI etc. is absolutely not sufficient to be able to fulfil that requirement. All trainings are technically oriented and the refresher/recurrent courses for FI and TRI etc. have usually only few HF subjects. To fulfil that requirement effectively EASA should check the basic syllabus to become an instructor and the requirements of keeping your license updated. As long as HF is accident cause nr. 1 and our FI training is based on flying skills only, there will be now improvement of training quality in general. Despite the requirement to implement CRM into all appropriate ..... We still have separation of these two areas (HF and practical training) right from the beginning (PPL) and that gives the industry the wrong impression.

response

Noted.

The opinion expressed is appreciated.

**3. Proposed amendments - 3.1. Draft Acceptable Means of Compliance (AMC) and Guidance Material (GM) (Draft Decisions) - 3.1.3. Air operations - Decision 2012/019/R (Part-SPA)**

p. 60

comment

280

comment by: *ATF - Awareness Training Fakoussa*

Many doctors are not very often on duty in a helicopter. It is already difficult for pilots who have been for some time active in daily operation to learn CC when transferring to multiple crew. They have a theoretical and a practical training. Why that expensive training, if a briefing would have the same effect? And which pilot is so knowledgeable in CRM that he can give a briefing on relevant elements? This is not a safe way to use the doctors as a safety element without a basic CRM training. As some doctors told me, they were “socialized” to sit in, cuff up and shut up. But during take off / landing and in cruise flight they are a valuable



pair of eyes that could give an early warning to the crew in front. Many pilots cannot see it like that as he is officially NOT part of the crew. So the importance of the doctors task and his warnings are undermined by being seen by many pilots as medical passenger only.

And there are also quite a few doctors around, that do not wish to be bothered with that “flight crap” stuff. Try to give him a briefing on CRM. If you fly as a passenger, you might have noticed the massive interest of passengers to the safety briefing.

response

Noted.

Having in mind that it is not possible to organise CRM training for medical passengers (the effort could not be justified), the Agency proposes to incorporate text concerning briefing on CRM matters to at least raise the awareness of medical passengers.

**3. Proposed amendments - 3.1. Draft Acceptable Means of Compliance (AMC) and Guidance Material (GM) (Draft Decisions) - 3.1.4. Aircrew — Decision 2012/005/R (Part-CC)**

p. 60-61

comment

52

comment by: *Ryanair*

**3.1.4 Aircrew - Decision 2012/005/R (Part-CC)**

Subpart TRA - TRAINING REQUIREMENTS FOR CABIN CREW ATTESTATION - APPLICANTS AND HOLDERS

AMC1 Appendix 1 to Part-CC(3) Initial training course and examination

CREW RESOURCE MANAGEMENT TRAINING TABLE

**Proposed text:**

~~Resilience development;~~  
~~Surprise and startle effect;~~

response

Not accepted.

Please refer to the discussion on resilience development and on the surprise and startle effect in Chapter 2 of this CRD.

**4. Regulatory Impact Assessment (RIA)**

p. 62-65



comment	239	comment by: ECOGAS/SVFB/SAMA
	<p>The envisaged applicable framework at the present stage may lead to little practical and partly non-effective training concerning 'non-technical skills' and the associated training. One reason is that it might not be clear in all cases what the term 'suitably qualified' means, which is used in the applicable framework. This implies a possible risk that no measurable improvement in the accident rate caused by known hazards and no substantial prevention of future hazards associated with these factors may be achieved.</p> <p><b>We support fully this statement of the EASA in respect of SME's.</b></p>	
response	<p>Noted.</p> <p>The support of ECOGAS/SVFB/SAMA is appreciated.</p>	

comment	240	comment by: ECOGAS/SVFB/SAMA
	<p><b>4.1.2 WHO is affected ?</b></p> <p>.....</p> <p>This would imply that flight crew, cabin crew and <b>technical crew</b> would also be affected.</p> <p><b>would</b> is not strong enough to justify inclusion of Maintenance into the CRM concept.</p> <p>The ROI is not proven and possible can't be proven for maintenance and for sure not for SME's</p>	
response	<p>Noted.</p> <p>Concerning maintenance, there must be a misunderstanding. The proposed provisions do not include maintenance.</p> <p>'Technical crew member' is defined in Annex I (Definitions) of Regulation (EU) No 965/2012 as follows: "'Technical crew member' means a crew member in commercial air transport HEMS, HHO or NVIS operations other than a flight or cabin crew member, assigned by the operator to duties in the aircraft or on the ground for the purpose of assisting the pilot during HEMS, HHO or NVIS operations, which may require the operation of specialised on-board equipment."</p> <p>As one can see, this definition is restricted to certain helicopter operations and does not include, for instance, maintenance personnel.</p>	

comment	241	comment by: ECOGAS/SVFB/SAMA
	<p>Quote:</p> <p>At this stage the current situation and regulatory conditions neither raise public concern nor</p>	



stir controversy among the general public or stakeholders.  
We absolutely oppose any regulatory activity just based on the possibility of a eventual different situation of occurrences, which is not justified by data.

response

Noted.

Even if 'the current situation and regulatory conditions neither raise public concern nor stir controversy among the general public or stakeholders', there might be other important reasons to launch a rulemaking task. This is the case for CRM training, and it is explained in depth in the Explanatory Note of the NPA.

comment

242

comment by: ECOGAS/SVFB/SAMA

#### **4.1.3. How could the issue/problem evolve?**

If the applicable framework is not changed, the situation cannot improve. Human factors will continue to be the major cause of accidents and incidents.

We agree but it does not need to be improved in the maintenance environment **of SME's for sure** and probably **not for major MRO's either**.

response

Noted.

Concerning maintenance, there must be a misunderstanding. The proposed provisions do not include maintenance.

## 5. References

p. 66-68

comment

85

comment by: FAA

Page 68. As a note, the FAA Advisory Circular on CRM referenced here is 10 years old and will be updated in the next few years.

response

Noted.

This information is appreciated.

comment

243

comment by: ECOGAS/SVFB/SAMA



**5. References**

None of the references is directed at causal factors in maintenance due to lack of CRM therefore maintenance should be left out completely, with the exception where maintenance staff are integrated part of the flight crew.

response

Noted.

Concerning maintenance, there must be a misunderstanding. The proposed provisions do not include maintenance.

**6. Appendix — Evaluation of a European survey on CRM training**

p. 69-79

comment

86

comment by: FAA

Page 71. As a note, it appears that assessment of CRM skills is already the norm in the EASA nations, just as it is in the US.

response

Noted.

This information is appreciated.



## **Appendix A — Attachments**

 [EASA NPA2014-17.pdf](#)

Attachment #1 to comment [#188](#)

 [PRM course table.pdf](#)

Attachment #2 to comment [#265](#)

