

Royal Aeronautical Society
Human Factors Group
4 Hamilton Place
London W1V 0BQ

6 June 2000

**SURVEY TO VALIDATE THE ‘GUIDE TO PERFORMANCE STANDARDS
FOR INSTRUCTORS OF CREW RESOURCE MANAGEMENT TRAINING
IN COMMERCIAL AVIATION’**

Dear Colleague

In September 1998, the Royal Aeronautical Society (RAeS) Human Factors Group (HFG), in concert with the UK Civil Aviation Authority (CAA) and the Aviation Training Association (ATA), published the *Guide to Performance Standards for Instructors of Crew Resource Management (CRM) Training in Commercial Aviation*. The product of a 2-year research programme that included two industry workshops, the *Guide* has since been received by more than 1250 people in 58 countries worldwide.

Also in 1998, a UK Aeronautical Information Circular (AIC), 114/1998 (Pink 178) dated 6 October, stated (Paragraph 2.1.3) that “the Authority expects that all who give instruction in CRM and associated subjects will meet the performance criteria indicated by the performance standard *Guide*”; a copy of the full AIC text is attached to the survey. Therefore, given that the *Guide* is likely to become the benchmark against which the Authority will in due course accredit CRM instructors, the RAeS HFG, the CAA and the ATA (the ‘Group’) believe it prudent to determine *formally* the validity and credibility of the document. Accordingly, a survey is being conducted, targetted at all UK Air Operator Certificate (AOC) Holders and all individual UK recipients of the *Guide*.

The survey is being undertaken now for three reasons:

1. A Joint Aviation Authorities (JAA) Notice of Proposed Amendment (NPA-OPS 16) dealing with the Rules for CRM training and CRM trainer qualification has been circulated for industry comment and could be adopted into JAR-OPS 1 (Commercial Air Transportation Aeroplanes) this year; a read-across to JAR-OPS 3 (Commercial Air Transportation Helicopters) is likely to follow.

3. Finally, the *Guide* has been in circulation for more than 20 months, a period we believe sufficient for CRM practitioners to assess its value and provide feedback.

To take forward work anticipated by the AIC, the Group is establishing an independent Industry Accreditation Panel (IAP) to provide, inter alia, advice to the CAA to ensure the highest standards of HF and CRM education and practice. The Panel has commissioned this survey and, to assure impartiality, has tasked an independent aviation consultant, Mr Pieter Hemsley, to conduct it. All data collected will be used solely to validate the *Guide* and will be collated anonymously. There will be neither attribution of comments from individual respondents nor identification of any views from specific operators.

Those of you who requested several copies of the *Guide* and distributed them to colleagues are asked, *before* you start this survey, to copy it to all such individuals and invite them to return it *direct* to the ATA - which, as the competence standards body for the UK aviation industry, is facilitating this survey - at:

Dralda House
Crendon Street
High Wycombe
Bucks, HP13 6LS

Alternatively, an electronic version is available at the RAeS site, www.raes-hfg.com/perfstan.htm, with instructions as to its completion and despatch to the ATA (mail@aviation-training.org).

Thank you for completing this important document. We hope that you have the satisfaction of knowing that you have contributed to establishing the credibility of the *Guide* as a benchmark in the accreditation of CRM trainers or, if you have criticisms, in helping to improve it to ensure a robust accreditation architecture is established in the UK.

Captain Jeremy Butler
Chair RAeS Human Factors Group and Accreditation Focus Group

RAeS HFG SURVEY TO VALIDATE THE ‘GUIDE TO PERFORMANCE STANDARDS FOR INSTRUCTORS OF CREW RESOURCE MANAGEMENT (CRM) TRAINING IN COMMERCIAL AVIATION’

Those of you who requested several copies of the Guide and distributed them to colleagues are asked, before you start this survey, to copy it to all such individuals and invite them to return it direct to the ATA at the address on Page 5.

All replies remain confidential. If you have critical comments, please be as specific as possible so that we know precisely what your concerns are and where change may be appropriate. Please continue on a separate sheet, if there is insufficient space on the form.

Instructions for Completion:

- 1a. If you have received a copy of the *Guide to Performance Standards for Instructors of Crew Resource Management Training in Commercial Aviation*, please complete the questionnaire fully, starting at Paragraph 3.
- b. If you have not seen the *Guide*, please action Paragraph 2.
2. If you have not seen the *Guide*, it is equally important for us to get ‘nil’ returns. Therefore, please tick the box here and complete Paragraphs 3, 4, 5 and 6 in full and, if relevant, also Paragraphs 10, 12 and 18, before returning the survey using the pre-paid label provided.

No

Thank you! You can get a hard copy of the *Guide* free from the printer, Riverprint - sales@riverprint.co.uk (01252 722771/fax 733633) - or download a copy from the internet at: www.raes-hfg.com/perfstan.htm or www.crm-devel.org/resources/misc/raesperf/perfstan.htm

3. In this questionnaire we are seeking your *personal* views. If your responses reflect your organisation’s *official* policy position, please indicate:

Yes	No
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4. Date (DD/MM/YY): / /00

Full time	Freelance
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5. Type of employment (*tick as appropriate*):

Current aircraft Type Rating:

Approximate total flight time, all types: Years flying:

6. Employment Category (*tick all that apply; please indicate whether active in a given category*):

Yes	Active

- Pilot
- Commander
- First Officer
- Flight Engineer
- Type Rating Instructor (TRI)
- Training Captain
- Type Rating Examiner (TRE)
- Commander conducting line checks
- Groundschool CRM instructor
- { Line Oriented Flight Training (LOFT) }
- { developer/instructor (*not* SFI) }
- Manager responsible for CRM training
- Cabin crew
- Multi Crew Co-operation (MCC) trainer
- Type Rating Training Organisation (TRTO)
- Flying Training Organisation (FTO)

Yes	Active

Tick appropriate columns at left and category/ies below:

Consultant: Aviation /Management development /
 Safety /Other (please specify):

Employer: Long haul /Short haul /
 Schedule /Charter ; Public Transport /Private /
 Aeroplane /Helicopter /
 Other (please specify):

Regulator: FOI /FO(T)I /Manager /

HF specialist /
 Other (please specify):

Psychologist /or Aviation physician /:

CRM training development /
 CRM training delivery /LOFT development /
 CRM trainer training /
 Other activity (please specify):

Official of trade/representative organisation:

GAMTA /BHAB /BALPA /
 Other (please specify):

Military Crew: RN Army RAF

Other (please specify):

7. In which context(s) are you involved in CRM training development, training delivery, or CRM trainer training; the 3 contexts are those in the Guide (*tick all that apply*)?:

- a. Aircraft, Simulator and Line Oriented Flight Training (LOFT)
- b. Base and Line Checks Instruction/Examination
(*Note: the base check is the Proficiency Check in the JAA*)
- c. Ground School/Classroom Instruction

8. How do you use/have you used the *Guide* (*tick all that apply*)?

- As a source of personal reference
- As a reference source for your team/group
- As a framework for developing training syllabuses and/or materials
- As a framework for developing standards for CRM instructor competence
- As a basis for developing assessment criteria for CRM instructor qualification
- Other (*please describe*):
-
-
- None of the above; if not why not?
-
-

9. Please indicate your agreement/disagreement with the four statements below by circling the appropriate number on the scale between 1 and 4. Where possible use the additional space provided to elaborate on your views:

1. Strongly Disagree 2. Disagree 3. Agree 4. Strongly Agree

a. The <i>Guide</i> is user-friendly	1	2	3	4
b. The <i>Guide</i> is clear and unambiguous	1	2	3	4
c. The <i>Guide</i> is comprehensive	1	2	3	4
d. The <i>Guide</i> is a useful tool	1	2	3	4

10. Please answer the following questions by ticking either 'Yes' or 'No':

Yes	No

I am familiar with the concept of performance indicators such as behavioural markers.

I am/we are using such markers at present for:

- training syllabus validation
- trainer observation training
- whole flight crew CRM assessment
- individual flight crew CRM assessment
- other (*please specify*):
-
-

11. I am satisfied that the Guide is a standard against which the competence of CRM instructors can be measured:

Yes	No
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12. I believe that CRM trainers with sufficient experience should be entitled to 'grandfather' rights, that is, a measure of credit towards accreditation. Note that the CAA has indicated that it would not grant accreditation automatically to existing trainers and some portfolio evidence of prior learning and/or achievement and a demonstration session are likely to be required as a minimum.

Yes	No
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13. I/we use the *Guide* for CRM training **other than** for pilots and/or flight engineers

Yes	No
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If 'Yes', please specify for whom:

14. A separate guide should be produced for this group/these groups (eg, cabin crew):

16a. I would be willing to be interviewed in greater depth on the telephone:

Yes	No
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b. I would be willing to participate in a face-to-face interview:

Yes	No
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If 'Yes' to either 16a or 16b, please ensure that you entered a contact telephone number under personal details in Paragraph 4 above.

17. Do you have any further observations on *any* part of this questionnaire (*please indicate the paragraph number(s) to which your comments apply*)?:

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18. Are there any other comments you have concerning the direction that CRM training *in general* is taking in the UK? Include any concerns you may have about issues *other than* validation of the *Guide* and CRM trainer accreditation. Please be as specific as possible:

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Thank you for participating in this survey. Your responses will be held in the strictest confidence. Please now return the questionnaire, using the pre-paid label provided, direct to the Aviation Training Association at:

**Dralda House
Crendon Street
HIGH WYCOMBE**

**TEXT FROM UK CAA AERONAUTICAL INFORMATION CIRCULAR
(AIC) 114/1998 (Pink 178) 6 October**

FLIGHT OPERATIONS STANDARDS

FLIGHT CREW CRM TRAINING STANDARDS

1 Introduction

1.1 Crew Resource Management (CRM) has become an integral part of crew training in the United Kingdom. AIC 117/1998 (Pink 180) previously AIC 143/1993 (Pink 90) and AIC 37/1995 (Pink 110) set requirements for initial and recurrent training of flight crew employed by Air Operator Certificate holders and for all authorised examiners. JAR-OPS Subpart N and Temporary Guidance Leaflet (TGL) No. 5 (*note: since superseded by NPA-OPS 16 dated December 1999*) also detail CRM training and assessment and further TGLs expanding upon the JAR-OPS requirement may be published in due course.

1.2 However, Operators have requested further guidance on the management of CRM training and the industry has recognised the need to establish instructors' performance standards. On the other hand, pilots' unions, whilst whole-heartedly supporting the need for CRM training, have expressed concern over the possible misuse of assessment of flight crew in non-technical subjects.

1.3 The Authority is aware of the need to keep an adequate balance between technical and non-technical training for flight crew and seeks to ensure that the content and delivery of CRM training, both initial and recurrent, remains practical and aligned with anticipated European requirements whilst ensuring that minimum standards are met.

1.4 The purpose of this Circular is to provide advice to industry on how to ensure the quality of CRM training, by drawing attention to research sponsored by the Authority and the JAA into the use of performance indicators known as Behavioural Markers, in order to assess the progress and effectiveness of CRM initial and recurrent courses. Additionally, reference is made to the joint Aviation Training Association (ATA)/Royal Aeronautical Society (RAeS)/CAA study (funded in part by the Department for Education and Employment) which sets out performance standards for CRM tuition.

1.5 Finally, views are given on the assessment of crew member performance in CRM.

ATA, British Airlines Pilots' Association and through the Human Factors Group of the RAeS, a practical document entitled "Guide to Performance Standards for Instructors of CRM Training in Commercial Aviation" has been produced. This document is now available from "Riverprint", Unit 9, Riverside Park, Farnham, Surrey, GU9 7UG (tel 01252 722771, fax 01252 733633, e-mail sales@riverprint.co.uk).

2.1.2 This document clearly sets out the performance standards for those who teach CRM and Human Factors. However, operators and interested organisations are free to use any suitable means to achieve those standards. The guide will also greatly assist those who teach purely technical subjects.

2.1.3 Now that adequate material is available, the Authority expects that all who give instruction in CRM and associated subjects will meet the performance criteria indicated by the performance standard guide. In due course, the Authority will seek to establish a means of CRM instructional accreditation, after further consultation with industry and collaboration with the JAA.

2.1.4 The expectation is that eventually CRM instructional skills will be integrated into instructor ratings (e.g. TRI) and examiner authorisations (e.g. TRE).

2.2 Effectiveness of CRM Training

2.2.1 Traditionally, the effectiveness of technical training of flight crew, their instructors and examiners has been measured by written examination and by practical skill tests such as aircraft type-rating written examinations, flight tests and observation of instructor and examiner performance.

2.2.2 However, vaguely defined non-technical subjects such as 'Captaincy' and 'Airmanship', whilst being recognised as essential attributes in addition to technical skills, have lacked any formally recognised measurement criteria. As a result, the assessment of the effectiveness of non-technical training has been very subjective and extremely variable, even to the extent of flight crew being assessed in a very arbitrary manner possibly to the detriment of their careers.

2.2.3 The introduction of CRM into formal flight crew training has done much to correct the situation. However, even the delivery of CRM training is proving to be very variable in content and technique. Consequently, the standard and thereby the overall effectiveness are greatly diminished.

2.2.4 The variability of CRM standards and the lack of common practical reference

would also recommend that operators using, or considering the development of, CRM assessment systems, review CAA Paper 98005 (available from Westward Digital Ltd, 37 Windsor Street, Cheltenham, Glos GL52 2DG tel. 01242 235151 fax 01242 584139) which details current practice and the European position with respect to evaluation of the draft non-technical skills standard (behavioural marker system).

2.2.6 Because there is evidence of confusion, and in some cases biased assessment, the Authority expects UK operators and organisations to use the JAA's draft NOTECHS framework (non-technical skills standard) as described in CAA Paper 98005, as a basis for assessment of the effectiveness of all CRM initial and recurrent CRM training, unless it can be shown that their proposals are similar or have clearly defined advantages which can be used to amend the draft standard in due course.

2.2.7 The CAA SRG Human Factors [staff] invites operators to participate in the collection of data for evaluating the draft standard.

3 Individual Flight Crew Assessment

3.1 The Authority is concerned that the JAR-OPS requirement for the assessment of flight crew CRM could be conducted in a haphazard and unfair manner by those who are neither qualified nor using an established system for reference. The expectation is that all instructors who deliver CRM subjects or who make any form of assessment will meet the instructional performance standards as discussed in paragraph 2.1 and will use the criteria described in paragraph 2.2 of this Circular.

3.2 The Authority is not in favour of CRM assessment of crew being conducted as an activity survey of each phase of the flight or relevant activity in a simulator. Rather, CRM skills should be included in the **overall** assessment when a flight crew member undergoes a proficiency check, line check or when undergoing such checks following the completion of a command course, using the criteria described in NOTECHS.

This Circular is issued for information, guidance and necessary action.