

Information and Advisory Notice No. 07

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Part-145 Personnel Requirements 145.A.30(e) Control of Maintenance Personnel Competence Human Factors Elements

1 Introduction

The opt-out option Malta took under Commission Regulation (EC) 2042/2003, Article 7, Par. 3 (c) not to apply the provisions of Annex II (Part-145) 145.A.30(e), human factors (HF) elements, comes to end on 28 September 2006. Although these provisions were not legally binding before the above-mentioned date, TM CAD approved Part-145 Maintenance Organisations took action to prepare themselves with regard to HF training requirements and undertook in the last two years the establishing of programmes for maintenance personnel human factors training.

This IAN is being published to present a review of the requirements of 145.A.30 (e) with regard to the HF elements and the associated EASA acceptable means of compliance and guidance material as a 'reminder'.

2 General

2.1 145.A.30 (e) requires that "The organisation shall establish and control the competence of personnel involved in any maintenance, management and/or quality audits in accordance with a procedure and to a standard agreed by the competent authority. In addition to the necessary expertise related to the job function, competence must include an understanding of the application of human factors and human performance issues appropriate to that person's function in the organisation".

2.2 AMC 145.A.30 (e) 6. states that "In respect to the understanding of the application of human factors and human performance issues, maintenance, management, and quality audit personnel should be assessed for the need to receive initial human factors training, but in any case all maintenance, management, and quality audit personnel should receive human factors continuation training".

This means that organisations should assess the personnel of above mentioned categories for the need to receive **initial HF training** and, based on that, should develop training programmes and schedules for initial HF training.

Initial HF training should also be provided to personnel joining the organisation, after evaluation of the need for such training and within six months of joining the organisation.

Temporary staff may need to be trained shortly after joining the organisation to cope with the duration of employment.

Personnel being recruited from another maintenance organisation approved under Part-145 and temporary staff should be assessed for the need to receive any additional HF training to meet the new maintenance organisation's human factors training standard.

2.3 With regard to the question of who should be receiving HF training, AMC 145.A.30 (e) 6. states that "This should concern to a minimum:

- Post-holders, managers, supervisors;
- Certifying staff, technicians, and mechanics;
- Technical support personnel such as, planners, engineers, technical record staff;
- Quality control/assurance staff;
- Specialized services staff;
- Human factors staff/human factors trainers;
- Store department staff, purchasing department staff;
- Ground equipment operators;
- Contract staff in above categories;"

Given the indispensable role that Accountable Managers play in ensuring the activities of the AMO's, understanding of HF elements is of importance also to the Accountable Managers. With this in mind, TM CAD strongly advises that Accountable Managers receive also adequate initial training on HF elements.

2.4 AMC 145.A.30 (e) 7. states that, "Initial human factors training should cover all the topics of the training syllabus specified in GM 145.A.30(e) either as a dedicated course or else integrated within other training. The syllabus may be adjusted to reflect the particular nature of the organisation. The syllabus may also be adjusted to meet the particular nature of work for each function within the organisation. For example:

- Small organisations not working in shifts may cover in less depth subjects related to teamwork and communication;
- Planners may cover in more depth the scheduling and planning objective of the syllabus and in less depth the objective of developing skills for shift working.

2.5 As regards the **HF continuation training**, it is clear from AMC 145.A.30 (e) 6. that all maintenance, management, and quality audit personnel should receive such training.

AMC 145.A.30 (e) 8. states that "the purpose of the HF continuation training is primarily to ensure that staff remain current in terms of human factors and also to collect feedback on human factors issues. Consideration should be given to the possibility that such training has the involvement of the quality department. There should be a procedure to ensure that feedback is formally passed from the trainers to the quality department to initiate action where necessary."

2.6 The AMC145.A.30 (e) 8. also states that "Human factors continuation training should be of appropriate duration in each two year period in relation to relevant quality audit findings and other internal/external sources of information available to the organisation on human errors in maintenance".

2.7 AMC 145.A.30 (e) 9. states that “Human factors training may be conducted by the maintenance organisation itself, or independent trainers or any training organisation acceptable to the competent authority”. AMC 145.A.30 (e) 10. states that “The HF training procedures should be specified in the maintenance organisation exposition”.

Practically, TM CAD accepts/will accept the training procedures and the provider(s) of HF training through the approval of the organisation’s MOE which includes such procedures and qualification requirements of the trainers.

Conclusion

3.1 In summary, the TM CAD Part-145 approved AMOs should accomplish following, in order to meet the requirements for personnel human factors training:

- a) Make sure that the written procedures already in place and approved by TM CAD are put into practice and if necessary reviewed.
- b) Identify the personnel to receive HF training (initial and continuation).
- c) Assess the need for personnel’s initial HF training (on individual basis).
- d) Develop programmes and schedules for personnel’s initial HF training. The programmes should describe the scope and the level of the training for each function within the organisation, taking into account the information in para. 2.4 above. The schedules should be such as to ensure timely provision of initial HF training in accordance with the assessment results as per para. 2.2 above.
- e) Develop programmes and schedules for personnel’s continuation HF training. The programmes should describe the scope and the level of the training, taking into account the information in paragraph 2.5 above. The schedules should ensure that all concerned personnel receive appropriate HF continuation training as per paragraph 2.6 above.
- f) Training development should take into consideration the important aspect of the organisation’s in house culture and set-up, with the objective of improving HF elements which play an important role in such a culture and set-up.

3.2 Useful information on the human factors in the aviation and in particular in the aircraft maintenance can be found in the following documents:

- ICAO Doc 9824. *Human Factors Guidelines for Aircraft Maintenance Manual*;
- ICAO Doc 9683. *Human Factors Training Manual*;
- UK CAA. CAP 716 *Aviation Maintenance Human Factors (EASA/JAR 145 Approved Organisations)*. Downloadable from <http://www.caa.co.uk>
- FAA of USA. *Operator’s Manual. Human Factors in Aviation Maintenance*. Downloadable from <http://www.hf.faa.gov/opsmanual/nav.aspx>