

Information and Advisory Notice No. 19

Issue No: 1 Dated: 30 April 2012

Electrical Wiring Interconnection Systems (EWIS) Training

1 Introduction

This Notice is intended to give guidance to the operators, Part-M Subpart G Continuing Airworthiness Management Organisations (CAMO) and Part-145 Approved Maintenance Organisations (AMO), on the personnel training on EWIS.

2 Background

Wiring safety concerns were raised following investigations of aircraft accidents in late eighties and nineties (e.g. TWA 800 B747 accident in 1996 and Swissair MD11 accident in 1998). Following the work and the recommendations of the Aging Transport System Rulemaking Advisory Committee (ATSRAC) established in the USA, the Federal Aviation Administration (FAA) has developed an EAPAS (Enhanced Airworthiness Program for Airplane Systems) regulatory package. The Joint Aviation Authorities (JAA) and later the European Aviation Safety Agency (EASA) joined FAA in the development and adoption of the EAPAS regulatory package.

As part of the regulatory package implementation, EASA introduced new and revised airplanes certification specifications through CS-25 “Certification Specifications for Large Aeroplanes”, amendment 5, with a new Subpart H – Electrical Wiring Interconnection Systems – EWIS. The new amendment has been published as part of the ED Decision No. 2008/006/R on the 29th August 2008 and entered into force on September 5th, 2008. The requirement for existing TC holders to develop EWIS Instructions for Continued Airworthiness (ICA) derived from the Enhanced Zonal Analysis Procedure (EZAP) has been imposed through the provisions of Part 21.A.3B(c)1 for existing TCs, 21.A.21(c)(3) for applicants for TC and 21.A.103(a)(2)(iii) for applicants for changes to TC.

EASA Decision 2008/007/R introduced AMC 20-21 “Programme to enhance aeroplane Electrical Wiring Interconnection System (EWIS) maintenance”, AMC 20-22 “Aeroplane Electrical Wiring Interconnection System Training Programme” and AMC 20-23 “Development of Electrical Standard Wiring Practices documentation”.

AMC 20-22 is meant to provide acceptable means of compliance for development of training programmes to improve the awareness and skill level of the aviation personnel in EWIS production, modification, maintenance, inspection, alterations and repairs. This AMC provides the approved organisations (operators, Part-M

Subpart G CAMOs and Part-145 AMOs) with acceptable means of compliance for their training obligations as required in paragraphs 21.A.145 and 21.A.245 of Part-21, 145.A.30 and 145.A.35 of Part-145 and M.A.706 of Part-M with respect to EWIS.

3 Development of organisations' EWIS training programmes

3.1 Applicability

Organisations operating, managing the continuing airworthiness or maintaining aeroplanes with following characteristics shall develop EWIS training programmes and train the associated personnel (for categories of personnel to be trained refer to sub-par. 3.3 below):

- Transport category;
- Turbine powered;
- Type Certificate issued after 1 January 1958;
- Seating capacity of 30 passengers or more, or payload capacity of more than 3402 kg (7500 lbs).

Following table lists aircraft types (list not exhaustive) for the operation, managing or maintaining of which EWIS training is required.

| TC holder | Model |
|--------------------|---|
| ATR | ATR42; ATR 72 |
| Airbus | A300, A310, A318, A319, A320, A321, A330, A340, A380 |
| Alenia | C-27J |
| BAe | BAe-146; AVRO 146; BAe Jetstream 4100 |
| Boeing | 707 (all models), 717 (all models), 727, 737 (all models), 747 (all models), 757 (all models), 767 (all models), 777 (all models), 787 |
| Bombardier | (CL-600-2B19 - Regional Jet Series 100,200,700/701/702, 900 and 1000; DHC-8 Series 100, 200, 300 and 400 |
| CASA | CN-235, C-295 |
| Dornier | 328-100, 328-300 |
| Embraer | EMB-120, 135 and 145; ERJ 170 and ERJ 190 |
| Fokker | F.27, F.28 |
| Lockheed | L-1011 (all models), L328 (all models) |
| Mc Donnell Douglas | DC-10 (all models), DC-8 (all models), DC-9 (all models), MD-80 (all models), MD-11 (all models) |
| Saab | 340 (SF-340), 2000 |
| Short | Short SD-3 |

3.2 Programme basis and objectives

The training programmes shall be developed using AMC 20-22 and the associated regulatory documents (listed in AMC par. 4) as a basis. Related reading material (listed in AMC par. 5) may also be used.

The objective of the training is to enhance the awareness of the importance of the EWIS safety and to ensure that proper procedures, methods, techniques and practices are used when performing maintenance, inspection, modification and cleaning of EWIS.

3.3 Categories of personnel to be trained

AMC 20-22 distinguishes between personnel directly involved in the maintenance and inspection of EWIS (identified as Target Groups 1 and 2) and personnel not directly involved in the maintenance and inspection of EWIS (identified as Target Groups 3 through 8) in that the training syllabi and curricula are different.

Whilst the training of the first category of personnel is required directly by the requirements and their training is therefore mandatory, there is no direct regulatory requirement for training of the second category of personnel. However, it is strongly recommended and expected that training is provided to this second category of personnel as this would greatly enhance the awareness of the importance of EWIS safety in the overall safe operation of aeroplanes.

Detailed description of the characteristics of each of the eight target groups personnel is provided in the AMC.

3.4 Essential elements for the training programme

Training programmes for initial and refresher training shall be developed customised for each target group using the minimum requirements outlined in Appendices A and B and curricula and lesson plans in Appendix C of AMC 20-22.

Assessment method (written test, oral test or demonstration of skills) may be at the discretion of the organisation.

4 Timeframe

4.1 The programme for the initial training for personnel directly involved in the maintenance and inspection of EWIS (Target Groups 1 and 2) shall be developed by the organisations not later than six months after the publication date of this Notice (for the existing organisations) or not later than three months after the issue of the approval certificate for the newly approved organisations. The initial training of this category personnel shall be carried out not later than six months after the publication date of this Notice (for the existing organisations) or not later than six months after the issue of the approval certificate for the newly approved organisations.

4.2 The programme for the initial training for personnel not directly involved in the maintenance and inspection of EWIS (Target Groups 3 through 8) shall be developed by the organisations not later than six months after the publication date of this Notice (for the existing organisations) or not later than six months after the issue of the approval certificate for the newly approved organisations. The initial training of this category personnel shall be carried out not later than twelve months after the publication date of this Notice (for the existing organisations) or not later than twelve months after the issue of the approval certificate for the newly approved organisations.

4.3 Refresher training shall be conducted in a period not exceeding two years. It could consist of a review of previously covered material plus any new material or revisions of the publications.

5 External training

Organisations may adopt to train their personnel in external training organizations. This shall be subject to the organization formally performing an assessment of external organisation's EWIS training programme for compliance with the

provisions of the AMC 20-22 and the applicable provisions of this Notice. Such assessment should be properly recorded.
