

Advisory Pamphlet

Additional training in fuel tank safety

AP-1.2.342A



AMO Certification

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1. מטרה (purpose)

- 1.1 מטרת פרסום זה להגדיר את דרישות ההדרכה למכוני הבדק בנושא עבודות המבוצעות באזור של מערכת דלק.
- 1.2 הפרסום מתייחס לכל טכנאי בדק כלי טייס העוסקים במטוסים מונעים בטורבינת סילון בעלי 30 מושבים או יותר או במטוסים מונעים בטורבינת סילון בעלי משקל מותר להעמסה (PAYLOAD) של 7500 פאונד או יותר.

2. חומר יחוס (Reference Material)

2.1 חוקים ותקנות (Regulatory Requirements)

- 2.1.1 תקנה 127(א)(3) בתקנות הפעלת כלי טיס וכללי טיסה
- 2.1.2 תקנה 421 בתקנות הפעלת כלי טיס וכללי טיסה
- 2.1.3 תקנה 18 בתקנות מכון בדק, מכון הסמכה ואחזקה עצמית

2.2 חומר עזר (Reference Material)

- 2.2.1 FAA SFAR 88
- 2.2.2 EASA DECISION No 2007/002/R DATED 13 March 2007
- 2.2.3 EASA DECISION No 2007/003/R DATED 13 March 2007

2.3 טפסים (Forms) – אין

3. הנחיות (Guidance and Procedures)

3.1. Personnel requirements

Additional training in fuel tank safety as well as associated inspection standards and maintenance procedures should be required of maintenance organizations technical personnel, especially technical personnel involved with **Airworthiness Limitations (AWL)** the compliance of **Critical Design Configuration Control Limitations (CDCCL)** tasks or **Airworthiness Limitations Instructions (ALI)**.

3.2. Fuel Tank Safety training

This section includes general instructions for providing training on Fuel Tank Safety (FTS) issues:

3.2.1. Levels of training

3.2.1.1. Level 1 Familiarization training

3.2.1.1.1. Objectives:

The attendant should, after the completion of the training:

- 3.2.1.1.1.1. Be familiar with the basic elements of the fuel tank safety issues.
- 3.2.1.1.1.2. be able to give a simple description of the historical background and the elements requiring a safety consideration, using common words and showing examples of non conformities.

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3.2.1.1.1.3. be able to use typical terms.

3.2.1.1.2. The familiarization training should include a presentation of bulletins/notices, short videos or CD material, poster campaigns, etc.

3.2.1.2. **Level 2 Detailed training**

3.2.1.2.1. Objectives:

The attendant should, after the completion of the training:

3.2.1.2.1.1. Know the history and the theoretical and practical elements of the subject, have an overview of Special Federal Aviation Regulations (SFARs) from 14 CFR SFAR 88 of the FAA and of JAA TGL 47, be able to give a detailed description of the concept of CDCCL, Airworthiness Limitations Items (ALI) and using theoretical fundamentals and specific examples,

3.2.1.2.1.2. Have the capacity to combine and apply the separate elements of knowledge in a logical and comprehensive manner.

3.2.1.2.1.3. Have detailed information on how the above items affect the aircraft in the scope of the activity of the organization or in the fleet.

3.2.1.2.1.4. Understand and carry out activities with the use of manufacturer and regulatory authority data providing instructions on design and maintenance, such as Service Bulletins, Airworthiness Directives, Aircraft Maintenance Manual, Component Maintenance Manual etc.

3.2.1.2.1.5. Use easily the manufacturer's documentation from various sources and apply corrective action where appropriate.

3.2.1.2.1.6. Identify the components or parts or the aircraft subject to FTS from the manufacturer's documentation, plan the action or apply a Service Bulletin and an Airworthiness Directive.

3.2.1.3. **Continuing training**

3.2.1.3.1. The interval between continuing training shall be established by the maintenance organization, but should not exceed two years.

3.2.1.3.2. The continuing training shall include knowledge on evolution of material, tools, documentation and manufacturer's or competent authority's directives.

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3.2.2. The personnel directly involved in Fuel Tank Safety (FTS) systems shall be qualified according to the following table:

Organization	Personnel	Level of knowledge	Continuing training
Aircraft and component maintenance organizations	Personnel in aircraft and component shop maintenance organizations involved in maintenance task planning, all personnel carrying maintenance tasks on aircraft or components classified as Fuel Tank Safety items, support staff and certifying staff	2	yes
	Management, quality assurance personnel and auditors, personnel in charge of stores, and any personnel not directly involved in maintenance activities as required by the organization	1	Not required
Aviation maintenance technician schools/ Maintenance Training Organization	Personnel in aircraft type course.	2	yes
CAAI	Management, inspectors and auditors.	1	Not required

3.3. **General requirements**

- 3.3.1. The training shall be carried out at the earliest for the personnel needing level 1 training Nevertheless, the training for the personnel needing level 2 training has to be carried out before any maintenance task is commenced on an aircraft or a component.
- 3.3.2. The training should be made in appropriate facilities containing examples of components, systems and parts affected by FTS issues and having access to aircraft or component where typical examples of FTS issues can be shown.
- 3.3.3. The use of pictures, films and practical examples of the maintenance on fuel tank system is recommended.
- 3.3.4. The training shall include a representative number of repair and inspections as required by the maintenance program showing the necessity of using the manufacturer's data.

3.4. **Characteristics of the training**

- 3.4.1. The following characteristics shall be taken into consideration when the level 1 or 2 training programs are being established:
 - 3.4.1.1. Understanding of the background and concepts of fuel tank safety as developed during the last 10 years, and

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- 3.4.1.2. How in maintenance organizations mechanics can recognize, interpret and handle the improvements that have been made or are being made during fuel tank system maintenance,
- 3.4.1.3. Awareness of any hazards working on the Fuel System, and especially with a Flammability Reduction System using nitrogen.
- 3.4.1.4. Paragraphs 4.1.1, 4.1.2 and 4.1.3 should be introduced in the training program addressing the following issues:
 - 3.4.1.4.1. The theoretical background behind the fuel tank safety: the explosions of mixtures of fuel and air, the behavior of those mixtures in an aviation environment, the effects of temperature and pressure, energy needed for ignition etc, the 'fire triangle',
 - 3.4.1.4.2. The major accidents and accident investigations and their conclusions,
 - 3.4.1.4.3. SFARs from 14 CFR SFAR 88 of the FAA and JAA Internal Policy INT POL 25/12: reason of these documents, and what was the ultimate goal, margins of fuel system safety improvements (from 10-6 to 10-9, in fact improvement by a factor 100-1000, to identify unsafe conditions and to correct them, to systematically improve fuel tank maintenance),
 - 3.4.1.4.4. Explain the concepts that are being used: the results of SFAR 88 of the FAA and JAA INT/POL 25/12: modifications, airworthiness limitations and CDCCL,
 - 3.4.1.4.5. Where relevant information can be found by the mechanics and how to use and interpret this information (maintenance manuals, component maintenance manuals)
 - 3.4.1.4.6. Fuel Tank Safety and Maintenance: fuel tank entry and exit procedures, clean working environment, what is meant by configuration control, wire separation, bonding of components etc,
 - 3.4.1.4.7. Flammability Reduction Systems (FRS): reason for their presence, their effects, the hazards of an FRS using nitrogen for maintenance, safety precautions in maintenance/working with an FRS,
 - 3.4.1.4.8. Recording maintenance actions, recording measures and results of inspections.