

ORGANIZATION EXPOSITION FOR THE PRODUCTION OF LARGE AIRCRAFT

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1 INTRODUCTION

Development of aviation and aerospace industry experienced strong interest of the company's manufactures aviation technology or aircraft. To obtain the status of such a production organization needs to fulfil a number of strict criteria. An important factor is knowledge within the aviation legislation and knows the knowledge correctly applied to the processing organization manual for the production of large aircraft. Always needs to rely on the applicable laws and to transfer this knowledge to the organization manual processing. This entire process of this manual is very demanding it is necessary to consider several factors so that the approval of the competent authorities of the States and organizations obtained a certificate authorizing it produces aviation technology or aircraft.

2 AVIATION LEGISLATION

Recognize and be familiar aviation legislation is very important. Outside the current regulations and rules you need to control the salaries legislation in the Slovak Republic. National Council of the Slovak Republic has resolved the law no.143/1998 of 2nd April 1988 on Civil Aviation (Aviation Act) and on amendment to certain laws. In the Aviation Act no.143/1988 should be emphasized that a higher legal authority has resolved laws in the European Parliament before the laws adopted by the National Council of the Slovak Republic.

2.1 EASA

Independent and responsible EASA European Aviation Safety Agency has been operating since 2003 on the basis of the European Parliament and of the Council no.1592/2002 EASA. According to European legislation as an independent EU body responsible Member States and EU institutions. The management Board, together with representatives of the member States and the European Commission approves the budget of the Agency and its program of activities. The aviation industry is actively involved in the Agency's activities through a series of consultative and advisory committees. It is also includes an independent Appeal Board.

EASA is part of the heart and the fixing of the European Union Strategy for Aviation Safety. The main mission is to promote and encourage the highest common safety and environmental standards in civil aviation.

The aim was to develop a common strategy where the most fundamental factor is to make it air transport to become the safest form of transport. Air transport recorded a steady increase gradually and ranks among the most frequently used form of transport it is therefore necessary in the common interest of ensuring security initiative at European level. National authorities conduct the majority of operational tasks. These include aircraft certification or licensing of pilots, the role of the Agency is also processed the common safety and environmental rules at the European level.

EASA also monitor the implementation of standards in practice through inspections in the Member States also performs the necessary expertise, education and research. EASA develops working relationship with similar organizations around the world, including the International Civil Aviation Organization (ICAO), Federal Aviation Administration (FAA) in the USA and aviation authorities in Canada, Brazil, Israel, China and Russia. Together with those organizations EASA in its labor relations focuses on the harmonization of standards and presentation of good practices in the field of aviation safety worldwide.

2.2 Prescript Part 21

Discusses the issue of certification of aircraft and related products, parts and appliances in the development and production organizations. This Regulation Part 21 consists of two basic parts- section A and B.

Section A discusses the requirements for applicants and their rights and obligations. Section B sets up concrete procedures for competent authorities (aviation authorities of the Member States of the European Community) affiliated to section A.

In comparison with the JAR 21, Annex contain acceptable methods of implementing and interpretative material (AMC and IEM) options transactions AMC and guidance material are subject to GM and content of Reg. 2003/1/2003 executive Director of EASA which is in force since 17th October 2003.

2.3. Structure of Prescript Part 21 Subpart G – Production Certificates

Applicability

- (a) Procedural requirements for issuing production certificates; and
- (b) Rules governing holders of those certificates.

Eligibility

Any person may apply for a production certificate if that person holds, for the product concerned

- (a) A current type certificate,
- (b) A supplemental type certificate, or
- (c) Rights to the benefits of that type certificate

or supplemental type certificate under a licensing agreement.

Application

Each applicant must apply for a production certificate in a form and manner prescribed by the FAA.

Organization

Each applicant for or holder of a production certificate must provide the FAA with a document describing how its organization will ensure compliance with the provisions of this subpart. At a minimum, the document must describe assigned responsibilities and delegated authority, and the functional relationship of those responsible for quality to management and other organizational components.

Quality system

Each applicant for or holder of a production certificate must establish and describe in writing a quality system that ensures that each product and article conforms to its approved design and is in a condition for safe operation. This quality system must include:

(a) Design data control. Procedures for controlling design data and subsequent changes to ensure that only current, correct, and approved data is used.

(b) Document control. Procedures for controlling quality system documents and data and subsequent changes to ensure that only current, correct, and approved documents and data are used.

(c) Supplier control. Procedures that

(1) Ensure that each supplier-furnished product or article conforms to its approved design; and

(2) Require each supplier to report to the production approval holder if a product or article has been released from that supplier and subsequently found not to conform to the applicable design data.

(d) Manufacturing process control. Procedures for controlling manufacturing processes to ensure that each product and article conforms to its approved design.

(e) Inspecting and testing. Procedures for inspections and tests used to ensure that each product and article conforms to its approved design. These procedures must include the following, as applicable:

(1) A flight test of each aircraft produced unless that aircraft will be exported as an unassembled aircraft.

(2) A functional test of each aircraft engine and each propeller produced.

(f) Inspection, measuring, and test equipment control. Procedures to ensure calibration and control of all inspection, measuring, and test equipment used in determining conformity of each product and article to its approved design. Each calibration standard must be traceable to a standard acceptable to the FAA.

(g) Inspection and test status. Procedures for documenting the inspection and test status of products and articles supplied or manufactured to the approved design.

(h) Nonconforming product and article control. (1) Procedures to ensure that only products or articles that conform to their approved design are installed on a type-certificated product. These procedures must provide for the identification, documentation, evaluation, segregation, and disposition of nonconforming products and articles. Only authorized individuals may make disposition determinations.

(2) Procedures to ensure that discarded articles are rendered unusable.

(i) Corrective and preventive actions. Procedures for implementing corrective and preventive actions to eliminate the causes of an actual or potential nonconformity to the approved design or noncompliance with the approved quality system.

(j) Handling and storage. Procedures to prevent damage and deterioration of each product and article during handling, storage, preservation, and packaging.

(k) Control of quality records. Procedures for identifying, storing, protecting, retrieving, and retaining quality records. A production approval holder must retain these records for at least 5 years for the products and articles manufactured under the approval and at least 10 years for critical components identified under §45.15(c) of this chapter.

(l) Internal audits. Procedures for planning, conducting, and documenting internal audits to ensure compliance with the approved quality system. The procedures must include reporting results of internal audits to the manager responsible for implementing corrective and preventive actions.

(m) In-service feedback. Procedures for receiving and processing feedback on in-service failures, malfunctions, and defects. These procedures must include a process for assisting the design approval holder to—

(1) Address any in-service problem involving design changes; and

(2) Determine if any changes to the Instructions for Continued Airworthiness are necessary.

(n) Quality escapes. Procedures for identifying, analyzing, and initiating appropriate corrective action for products or articles that have been released from the quality system and that do not conform to the applicable design data or quality system requirements.

Quality manual

Each applicant for or holder of a production certificate must provide a manual describing its quality system to the FAA for approval. The manual must be in the

English language and retrievable in a form acceptable to the FAA.

Location of or change to manufacturing facilities.

(a) An applicant may obtain a production certificate for manufacturing facilities located outside of the United States if the FAA finds no undue burden in administering the applicable requirements of Title 49 U.S.C. and this subchapter.

(b) The production certificate holder must obtain FAA approval before making any changes to the location of any of its manufacturing facilities.

(c) The production certificate holder must immediately notify the FAA, in writing, of any change to the manufacturing facilities that may affect the inspection, conformity, or airworthiness of its product or article.

Inspections and tests

Each applicant for or holder of a production certificate must allow the FAA to inspect its quality system, facilities, technical data, and any manufactured products or articles and witness any tests, including any inspections or tests at a supplier facility, necessary to determine compliance with this subchapter.

Issuance

The FAA issues a production certificate after finding that the applicant complies with the requirements of this subpart.

Production limitation record

The FAA issues a production limitation record as part of a production certificate. The record lists the type certificate number and the model of every product that the production certificate holder is authorized to manufacture.

Duration

A production certificate is effective until surrendered, suspended, revoked, or the FAA otherwise establishes a termination date.

Transferability

The holder of a production certificate may not transfer the production certificate.

Privileges

(a) The holder of a production certificate may

(1) Obtain an aircraft airworthiness certificate without further showing, except that the FAA may inspect the aircraft for conformity with the type design; or

(2) In the case of other products, obtain approval from the FAA for installation on type-certificated aircraft.

(b) Notwithstanding the provisions of §147.3 of this chapter, the holder of a production certificate for a primary category aircraft, or for a normal, utility, or acrobatic category aircraft of a type design that is eligible for a special airworthiness certificate in the primary category under §21.184(c), may

(1) Conduct training for persons in the performance of a special inspection and preventive maintenance program approved as a part of the aircraft's type design under §21.24(b), provided a person holding a mechanic certificate with appropriate airframe and power plant ratings issued under part 65 of this chapter gives the training; and

(2) Issue a certificate of competency to persons successfully completing the approved training program, provided the certificate specifies the aircraft make and model to which the certificate applies.

Responsibility of holder

The holder of a production certificate must

(a) Amend the document required by §21.135 as necessary to reflect changes in the organization and provide these amendments to the FAA.

(b) Maintain the quality system in compliance with the data and procedures approved for the production certificate;

(c) Ensure that each completed product or article for which a production certificate has been issued, including primary category aircraft assembled under a production certificate by another person from a kit provided by the holder of the production certificate, presented for airworthiness certification or approval conforms to its approved design and is in a condition for safe operation;

(d) Mark the product or article for which a certificate or approval has been issued. Marking must be in accordance with part 45 of this chapter, including any critical parts;

(e) Identify any portion of the product or article (e.g., sub-assemblies, component parts, or replacement articles) that leave the manufacturer's facility as FAA approved with the manufacturer's part number and name, trademark, symbol, or other FAA approved manufacturer's identification;

(f) Have access to type design data necessary to determine conformity and airworthiness for each product and article produced under the production certificate;

(g) Retain its production certificate and make it available to the FAA upon request; and

(h) Make available to the FAA information regarding all delegation of authority to suppliers.

Amendment of production certificates

The holder of a production certificate must apply for an amendment to a production certificate in a form and manner prescribed by the FAA. The applicant for an amendment to a production certificate to add a type certificate or model, or both, must comply with the applicable requirements of §§21.137, 21.138, and 21.150.

Changes in quality system

After the issuance of a production certificate

(a) Each change to the quality system is subject to review by the FAA; and

(b) The holder of a production certificate must immediately notify the FAA, in writing, of any change

that may affect the inspection, conformity, or airworthiness of its product or article.

2.4 Prescript Far Part 21

Regulation FAR Part 21(ICA0 prescription USA) although not among the EU rules, but closely related and follows the regulations issued in the European Union. Regulation FAR Part 21 tackles certification of product and parts.

FAR rules are intended FAA governing all aviation in the United States. FAR are parts of Title 14 of the CFR. It is a wide range of activities which are regulated by the construction and maintenance of aircraft, current airline flights, pilot training, hot air balloons, aircraft lighter than air, lighting and signage. The rules are designed to promote safe aviation, protecting pilots, flight attendants, passengers and the general public from unnecessary risk. Since 1958 these rules are typically referred as FAR.

3 ORGANIZATION EXPOSITIONS FOR THE PRODUCTION OF LARGE AIRCRAFT

Processed manual production organization is essential to obtain permission for the production organization of aviation technology and equipment. Instruction is processed according to Commission Regulation (EU) no.748/2012 of 3rd August 2012, Annex1, Part 21, Sub-abstract G - production organization approval. Manual shall be submitted to the National Representative EASA or the aviation authorities of the Slovak Republic, which is part of DU SR. Responsible manager must be filled in the prescribed manner application where application must be accompanied processed guide, which declares at the outset that all the data that is in the manual use is correct. LU SR on the basis of their guide compares actual reality. If there are discrepancies pausing certification procedure to correct deficiencies.

3.1 Quality system

The handbook is an important part of the quality system. The producer organization must always demonstrate that it has established respectively can maintain a quality system. The quality system must be documented in details. This quality system shall be such as to enable the organization or its partners or supplied from or sub-contracted parties to the applicable design data and is in condition for safe operation. That organization could exercise the privileges set up in point 21A.

3.2 Description

Core of the handbook is a description of the organization. The purpose of the description of the organization of production (POE) is administered in the form of a brief document organizational relationship, responsibilities

and associated powers, produces means and methods of the organization.

a. Obligations of the holder - basic working document.

The basic prerequisite of obtaining a production organization approval is consistent with the interpretation of the organization of production. The organization should make interpretation of the organization of production to the workers where necessary for the performance of their duties. It should therefore be established distribution list, where the interpretation of the organization of production refers mainly to separate manuals and procedures. The organization should ensure that workers have access to and are familiar with their part of the contents of the organizations production or referenced document covering their activities.

b. Obligation of the holder

Condition for safe operation License holder of the production organization should before issuing the declaration of conformity for the competent authority of the Member State of registration made statements in order to ascertain the satisfactory condition at all those points. Documented result should be recorded in the records of the holder of the production organization. May be required to make some of these points have been provided or made available to the operator or owner of the aircraft and in some cases the competent authority of the Member State of Registry.

c. List of personnel for certification

Personnel certification is appointed by the production organization to ensure that the products, aircraft parts, devices or material will meet the requirements for the issue of the declaration of conformity or the certificate of release authorized person. Certifying the status of persons and their number should match the complexity and intensity of production. Qualification of certifying staff based on his knowledge, training, experience and in my training or examination, which determines the organization to ensure that the qualification is a reasonable product, aircraft parts or equipment to be released.

Training should be provided to high-level knowledge of the process of the organization under air legislation, related regulations, rules and advisory material GM. The organization shall for this purpose beyond the general principles of training define which staff should be designated as personnel certification.

d. General prescription of manpower

It is necessary to meet the manpower most stringent criteria of the theoretical knowledge, practical usability and ultimately the practical experience.

Manufacturing organization ensure sufficient manpower to make them available to all activities of production, testing, services and inspection.

- e. When processing manual is also necessary to demonstrate graphically manipulated and layout of buildings, hangars.

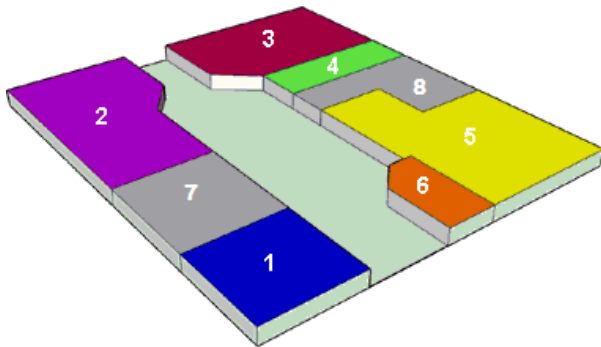


Figure 1 Scheme structure of the halls of the organization

List of operational elements (Fig. 1)

- Design and welding hall (Building No.1)
- Coating(Building No.2)
- Hall of fixing (Building No.3)
- Stock tires (Building No.4)
- Entrance hall, repairs, claims (Building No.5)
- The main building, office building, dining room, dressing room (Building No.6)
- Assembly hall engines (Building No.7)
- Stock engine (Building No.8)

f. General description of the rights of the production organization

Obligations of the holders specified in the basic working document. The basic prerequisite for obtaining a production organization approval is consistent with the description of the organization of production.

g. Description of the quality system

The quality system must include a control procedure if the scope of approval for:

- Issue, approval or change the document
- Audit and control of the Vendor and subcontractor assessment
- Verification of the supplied parts, materials and equipment including new or used by buyers of products supplied by the applicable design data
- Identification and traceability
- Production processes
- Inspection and testing, including production flight tests under production
- Calibration of tools, jigs and test equipment
- Control of nonconforming items
- Airworthiness coordination with the applicant for a design approval or approval holder

- Records completion and retention
- The fitness and qualifications of personnel
- The insurance of airworthiness documents
- Handling, storage and packaging
- Internal quality audits and resulting corrective actions
- Work under the terms of the authorization which is performed at any location other than the approved facilities
- Work earned out after completion of production but prior to delivery to maintain the aircraft in a condition for safe operation
- Issue of permit and approval of associated flight conditions.

h. When processing manual is suitably processed graphically and organizational structure of the organization.

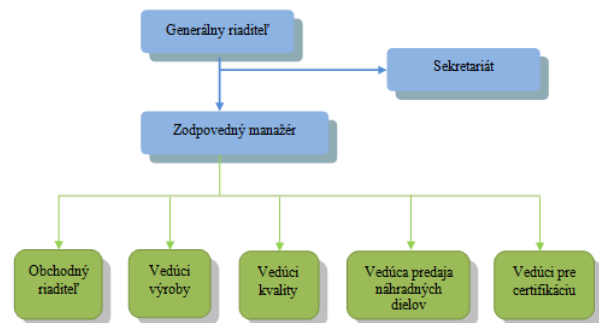


Figure 2 organizational structure of the organization

5 CONCLUSIONS

Legislation in the production of aviation technology is constantly evolving, it is therefore necessary to constantly respond to the adopted amend them so as to guide the production organization is in accordance with current legislation.

When processing handbook to keep in mind are linked and impact on the environment. Even though I did not address this issue in details in my thesis, it is necessary to take into account the processing manuals and laws for environmental protection, which can be specifically adjusted for the occupation of the production organization.

Each instruction production organization represents some original production that respects the particularities of a specific type of aviation technology in the specific conditions of the manufacturer.

Organization exposition for the production of large aircraft is steady document is subject to changes resulting from the development of such legislation itself as well as the organization itself. Regular reporting changes are mandatory and must be incorporated into the manual.

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