

ADVISORY CIRCULAR

SUBJECT: AIRCRAFT DISASSEMBLY AND RECYCLING MANAGEMENT	DATE: 2021-01-10	AC NUMBER: 000-06	VERSION: 1.00
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NOTE: THIS ADVISORY CIRCULAR IS PUBLISHED TO PROVIDE REGULATORY INFORMATION AND DESCRIBE ACCEPTABLE MEANS OF COMPLIANCE WITH THE GENERAL AUTHORITY OF CIVIL AVIATION REGULATIONS (GACAR).

CHAPTER 1 – AIRCRAFT DISASSEMBLY AND RECYCLING MANAGEMENT

1.1 Purpose:

The purpose of this advisory circular is to provide guidance and information that is required to be taken when an aircraft is determined to be destroyed, demolished, scrapped or dismantled, followed by the waste management regulations in the Kingdom of Saudi Arabia. Such actions include the disposition of aircraft identification plates, aircraft de-registration, and compliance with aircraft recordkeeping requirements.

1.2 Applicability.

This advisory circular is applicable to any interested person or party and all regulated entities under the GACAR.

1.3 Cancellation.

This is the first official version of this advisory circular and it cancels no other advisory circular on the subject matter.

1.4 Related Regulatory Provisions:

GACAR Part 47.41(a)(2), Part 45.25, Part 45.28

1.5 Related Reading Material:

- FAA Order No. 8100.19
- FAA Advisory Circular No. 00-56B
- FAA Advisory Circular No. 21-29D
- FAA Advisory Circular No. AC 20-62

1.6 Definitions of Terms Used in this Advisory Circular.

Affected parties should refer to Subpart A of GACAR Part 1 for a full listing of defined terms used in the GACAR. This Advisory Circular does not introduce any new terminologies except some common terms used related to the subject given as follows;

- **Asset:** an item that is being disassembled, such as an aircraft, engine, or any assembly of commercial aircraft parts.
- **Demolition:** when used in reference to an Asset, means to destroy, smash, flatten, or demolish so as to render it totally useless from its former state.
- **Disassembly:** when used in reference to an asset, means to take apart or dismantle constituent parts from a given next higher assembly. It is not intended to address disassembly that occurs incidental to maintenance (e.g. a teardown that is a step in an overhaul).
- **Discard,** when used in reference to an asset, means to dispose of the remainder of the asset in a permissible manner – including all parts and assemblies that are not being retained as airworthy aircraft parts through the disassembly process.
- **Approved Maintenance Organization (AMO):** A maintenance organization certificated by GACA.
- **Part:** any component, part, sub-part, assembly, sub- assembly, or other item removed from the asset.
- **Procedure:** a written method or practice for accomplishing a task.
- **Recycling:** a series of activities in which material is processed into specification- grade commodities, and consumed as raw-material feedstock, in lieu of virgin materials, in the manufacture of new products. The series of activities that make up recycling include the collection, processing and subsequent consumption of industrial, end of life and obsolete scrap, as well as the process of transforming used products, whole or in part, into reusable commodities.

1.7 Approval:

This Advisory Circular has been approved for publication by the Assistant President, Aviation Standards Sector of the General Authority of Civil Aviation.

1.8 Overview:

This chapter contains the information about the standards, practices and procedures acceptable to the GACA to perform Aircraft Disassembly, Recycling, Component Management and Demolition services. Further, to ensure that industry's best

management practices are adopted, the people or a company performing the task are complying with all the applicable national occupational health and safety laws and standards.

Moreover, appropriate tooling, equipment and / or machinery, personnel with appropriate training related to the functions they perform are in accordance with accredited services.

1.9 The aircraft end-of-life process.

Aircraft end-of-life process is generally divided into two separate phases:

- The first phase, which includes the processes up to the removal of parts for re-use in other aircraft, is part of the aviation domain and subject to the related regulations.
- In the second phase, which comprises final dismantling and recycling, the retired aircraft has lost its certification and aviation regulations are no longer applicable.

1.10 Industry Best Management Practices (BMP)

Presently, two global industry associations have produced documents describing best practices in aircraft decommissioning and recycling:

- i. The Best Management Practices (BMP) by the Aircraft Fleet Recycling Association (AFRA).
- ii. The Best Industry Practices for Aircraft Decommissioning (BIPAD) manual by IATA.

The AFRA is an international non-profit association bringing together different sectors of the aircraft industry to promote environmental best practice, regulatory distinction in the fields of aircraft disassembly, as well as the salvaging and recycling aircraft parts and materials. The AFRA Best Management Practice (BMP) Guides offer detailed direction on best environmental practice and technological solutions for the disassembling of aircraft airframes and engines.

Whereas, IATA has developed its Best Industry Practices for Aircraft Decommissioning (BIPAD) manual with the principal aim of providing guidelines for airlines and other aircraft owners and operators to manage aircraft decommissioning in an environmentally friendly and economically sensible way, while meeting all relevant regulations and avoiding safety and environmental risks.

a) Best Management Practices under the authorized AMOs:

Aircraft End-of-Life process is required to be initiated in a controlled manner and dismantling activity shall be performed under supervisory responsibility of GACA approved AMO to adhere the GACA requirements mentioned in para

1.4.

Part 145.27, para (C) authorizes a limited rating for specialized services, as the operations specifications of the repair station will contain the specification to perform the activities under the category of ‘specialized services’, as follows;

- i. Aircraft Disassembly
- ii. Aircraft Demolition/ Recycling and
- iii. Aircraft Component Management.

Part-145 approved AMO shall be issued with the rating under the specialized services for Aircraft Disassembly having the corresponding accreditation form AFRA.

b) Best Management Practices under the NON-AMO companies.

Apart from Part-145 AMOs, any contractor or company intends to perform aircraft disassembly activities in the Kingdom of Saudi Arabia must seek prior authorization from the GACA and all such applications along-with a proof of AFRA accreditation shall be submitted to GACA Economic Licensing Department to perform the functions as mentioned in para 1.10(a)(i,ii,iii), however, such companies scope of work shall be limited to ‘Demolition’ only, subject to meeting the national environmental and waste management regulations.

CHAPTER 2 – IDENTIFICATION AND DISPOSITION OF AIRCRAFT PARTS AND MATERIALS

1.1 Purpose:

This chapter provides information and guidance to the Kingdom of Saudi Arabian aviation industry including contractors, operators, organization or persons involved in the maintenance, sale, disassembly or disposal of aircraft parts with information and guidance to prevent scrap aircraft parts and materials from being sold or acquired as serviceable parts and materials.

1.2 Applicability:

This advisory circular is applicable to any interested person or party and all regulated entities under the GACAR.

Operators, approved maintenance organization, approved suppliers or licensed aircraft maintenance engineer(s) involved in maintenance of aircraft are encouraged to adopt the content of this circular into internal standard operating procedures.

All Suspected Unapproved Parts shall be reported accompanied with all the necessary evidence. The report shall be sent to GACA to enable appropriate investigation to be initiated.

1.3 Introduction

It is common practice for owners of aircraft parts to dispose of scrap parts and materials by selling, discarding, or transferring such items. In some instances, these items have reappeared for sale in the active parts inventories of the aviation community. Misrepresentation of the status of parts and material and the practice of making such items appear serviceable could result in the use of non-conforming parts and materials.

2.1.2 Types of parts and materials that may be misrepresented.

Persons disposing of scrap aircraft parts and materials should consider the possibility of such parts and materials being misrepresented and sold as serviceable at a later date. Caution should be exercised to ensure that the following types of part and materials are disposed of in a controlled manner that does not allow them to be returned to service:

- a) Parts with non-repairable defects, whether visible or not to the naked eye.
- b) Parts that are not within the specification set forth by the approved design and cannot be brought into conformance with the applicable specification.
- c) Parts and materials for which further processing or rework cannot make them eligible for certification under a recognized released system.
- d) Parts subjected to unacceptable modification or rework that is irreversible.
- e) Life-limited parts that have reached or exceeded their life limits or have missing or incomplete records.
- f) Parts that cannot be returned to an airworthy condition due to exposure for extreme forces or heat such as that may be experienced during an accident.
- g) Principal Structural Elements (PSE) removed from a high-cycle aircraft for which conformity cannot be accomplished by complying with the mandatory requirements applicable to ageing aircraft.

2.1.3 Methods to prevent mis-presentation of scrap parts and materials.

Persons disposing of scrap parts and materials should, when appropriate, mutilate those parts and materials prior to release. Mutilation should be accomplished in such a manner that the parts become unusable for their original intended use, nor should they be able to be reworked or camouflaged to provide the appearance of being serviceable, such as by re-plating, shortening and re-threading long bolts, welding, straightening, machining, cleaning, polishing, or repainting.

2.1.3.1 Mutilation may be accomplished by one or a combination of the following procedures, but is not limited to:

- Grinding
- Burning
- Removal of a major lug or other integral feature
- Permanent distortion of parts
- Cutting a hole with a torch or saw
- Melting
- Sawing into many small pieces

2.1.3.2 The following procedures are examples of mutilation that often less successful because they may not be consistently effective:

- Stamping (such as a stamped ‘Reject’ on a part)
- Spraying with paint
- Hammer marks
- Identification by tag and markings
- Drilling small holes
- Sawing in two pieces. Persons who rework scrap parts and materials may be skilled technicians and attempt to restore parts cut in two pieces in such a manner that the mutilation proves difficult to detect.

2.1.3.3 Persons disposing of scrap aircraft part and materials for legitimate non-flight uses, such as training and education aids, research and development, or for the non-aviation applications. In such instances, mutilation is not appropriate, and the following methods should be used to prevent misrepresentation:

- a) Permanently marking or stamping the parts, subparts and material as ‘NOT SERVICEABLE’.
- b) Removing original part number identification
- c) Removing data plate identification
- d) Maintaining a tracking or accountability system, by serial number or other individualized data, to record transferred scrap aircraft parts and materials; and
- e) Including written instructions concerning disposition and disposal of such parts and materials in any agreement or contract transferring such parts and materials.

NOTE: scrap or expired life-limited parts and materials should not be passed on to any person or organization who may end up placing the parts and materials back in actual use, due to critically of parts and material failure and the potential safety threat.

2.1.3.4 Organizations handling up scrap or expired life-limited aircraft parts and materials should be establishing a quarantine store area in which to segregate such items from active serviceable inventories and to prevent unauthorized access.

2.1.3.5 Manufacturers producing approved aircrafts should be considered maintaining records of serial numbers for ‘retired’ life-limited or other critical parts. In such cases, the owner who mutilates applicable parts is encouraged to provide the original manufacturer with the data plate and/or serial number and final disposition of the part.

2.1.4 Method to Identify Suspected Unapproved Parts (SUP).

2.1.4.1 The airworthiness of aeronautical products may be compromised if a part’s approval status is suspect or unknown. Positive identification of unapproved parts has proven to be difficult because they can closely resemble approved parts. Operators or organization while dealing with aircraft parts and materials should ensure that bogus or suspected unapproved parts and materials are not received into active inventory. Some of examples but not limited to the following conditions are mentioned to be alert when receiving the parts:

- a) Parts showing sign of rework which were purchased as ‘new’.
 - b) Used parts showing signs of unapproved or inappropriate repair.
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- c) Parts with poor workmanship or signs of rework in the area of the part data plate, number or serial number inscription.
 - d) Used parts lacking verifiable documentation of history and approval.
 - e) Parts with prices ‘too good to be true’.
 - f) Questionable part numbers, fraudulent and suspicious Technical Standard Order or FAA Parts Manufacturer approval markings and/or re-identification, stamps-overs or vibro-etching on the data plate.
 - g) Parts delivered with photocopied or missing FAA 8130-30, EASA Form 1 or other acceptable release documentation.
 - h) Parts with a finish that is inconsistent with industry standards (e.g. discoloration, inconsistencies, resurfacing)
 - i) Parts purchased as new but with release documentation reflecting a status other than new.
 - j) Parts with poor documentation exhibiting incomplete or inconsistent part identity information.
 - k) Intact ‘scrap’ unsalvageable parts offered in bulk weight for prices higher than mutilated parts with identical weight and content.

2.1.5 Disclosure of SUP Information to GACA.

2.1.5.1 The US FAA has issued an advisory circular AC No.21-29D providing information and guidance to the aviation community for detecting and reporting suspected unapproved aircraft parts and procedures for referral of such reports to the appropriate FAA office. Because of the increase activity being undertaken in United States against suspected unapproved parts, it is likely that the vendors of these parts will direct their activities towards other parts of the world, because of the reduce risk of detection.

2.1.5.2 GACA always encourage the disclosure of information regarding aviation safety. Any evidence of unapproved parts must be immediately reported. In the event, an unapproved part is identified, the person, maintenance organization or operator who is responsible shall make a report on GACA Form 8120-11 in accordance with GACAR Part 4.3(c)(3).