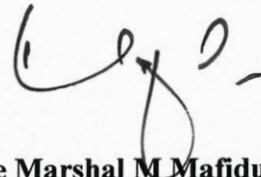


FOREWORD

This Guidance Material (GM) is issued to provide information and guidance to persons and organisations on the usage of parts removed from an aircraft no longer in service; parts recovered from an aircraft involved in an accident; and the disposal of scrap parts and materials”.

This GM applies to CAAB Part M Subpart F, Part 145 approved maintenance organisations, AOC Holders and owners/operators of aircraft registered in Bangladesh.

This GM is effective on the day of publication on the CAAB website.



Air Vice Marshal M Mafidur Rahman

BBP, BSP, BUP, ndu, afwc, psc

Chairman

Civil Aviation Authority of Bangladesh

**Guidance Material on
Usage of Parts Removed from an Aircraft No Longer In Service and
Disposal of Scrap Parts & Materials**

1. INTRODUCTION.

The technical requirements of point 21.A.181 (a) 1 provides amongst other that the airworthiness certificate shall remain valid subject to compliance with the applicable type-design and continued airworthiness requirements. Point M.A.902 (b) stipulates amongst other that an aircraft must not fly if the airworthiness certificate is invalid or if the continuing airworthiness of the aircraft or any component fitted to the aircraft does not meet the requirements of this Part (Part M). It follows, therefore, that generally in accordance with the Airworthiness requirements of CAAB, a Bangladesh registered aircraft shall not be flown if the aircraft or a component fitted on the aircraft has been overhauled, repaired, replaced, modified or maintained, unless a certificate of release to service or an equivalent release document has been issued for that aircraft or component.

For the overhaul, repair, inspection and modification of aircraft, components or equipment and replacements of components and equipment, the work must be undertaken in accordance with approved conditions and procedures; approved components, parts or material must be used and a certificate of release to service must be issued on completion of the work.

In the aviation industry, owners of aircraft parts may be involved in the usage of parts removed from an aircraft no longer in service; parts recovered from an aircraft involved in an accident; or the disposal of scrap parts and materials. This GM provides information and guidance to persons and organisations involved in the maintenance, distribution, sale or control of such aircraft parts. The need to ensure that parts installed on an aircraft meet the design specification and are serviceable is self-evident. The installation of any part failing to meet the intended design requirements degrades those requirements, leading to a degradation of airworthiness.

2. REFERENCES.

ANO Part 21, Subpart K, as amended, in particular points 21.A.181 (a)1, 21.A.315 & 21.A.317, ANO B.14, ANO Part M, M.A.504, AMC.M.A.504 (a), (b),(c), (d) 2 and (e).

3. Parts Removed from an Aircraft No Longer In Service

- 3.1 Aircraft withdrawn from service are often used as a source of spare parts, a process sometimes described as “parting out”. These parts, although serviceable at the time the aircraft was placed in storage, may have been affected adversely by storage conditions, including especially environmental factors, or by the length of storage.
- 3.2 The records for the aircraft and its parts prior to the aircraft being placed into storage will need to be researched in order to ascertain the previous maintenance history, and MCAI, modification and repair status of the parts being removed. Any unusual events immediately prior to storage, e.g. heavy landings or lightning strikes, will also have to be considered when deciding on the serviceability of the parts being removed.
- 3.3 It is important that the part removal process be planned and controlled in a manner as close as possible to that adopted for routine maintenance tasks on in-service aircraft. The following points in particular should be considered:

- (a) The means by which the part is removed should be in accordance with the normal maintenance data (e.g. maintenance manuals), using the tooling specified;
 - (b) Adequate access equipment should be provided;
 - (c) If conducted in the open, disassembly should cease during inclement weather;
 - (d) All work should be carried out by appropriately qualified maintenance personnel;
 - (e) All open connections should be blanked; and
 - (f) A protected and enclosed quarantine storage area for the parts being removed should be provided in the immediate vicinity of the work area.
- 3.4 An assessment for condition and eventual return to service of each removed part will need to be conducted by a suitably approved organisation. The extent of the work necessary before the part is returned to service may range from a simple external visual inspection to a complete overhaul.

4. Parts Recovered from an Aircraft Involved in Accidents

- 4.1 When an aircraft has been involved in an accident, the title to the salvage may pass from the insured owner to the other person (e.g. aircraft insurers) and this salvage may be offered for sale either complete or as separate aircraft item in an “as is, where is” condition. Though such items may not manifest any visual evidence of damage, distortion or change of characteristics, a serious airworthiness hazard could result from their use if special precautions are not taken. While some items may be totally unaffected by the accident or incident which caused the aircraft to be declared as salvage, it is essential to obtain clear evidence that this is the case. If such evidence cannot be obtained, the item shall not be returned to service.
- 4.2 Before overhaul and reinstallation can be considered, all such items must therefore be subject to competent assessment and inspection in the light of adequate knowledge of the circumstances of the accident, subsequent storage and transport conditions, and with evidence of previous operational history obtained from valid airworthiness records. Confirmation of this assessment in the form of an airworthiness release is essential.
- 4.3 In particular, if a crash load is sufficient to take any part above its proof strength, residual strains may remain which could reduce the effective strength of the item or otherwise impair its functions. Loads higher than this may cause the item to crack, with an even more dangerous potential. Further, a reduction in strength may be caused by virtue of the change of a material’s characteristics following overheat from a fire. It is therefore of the utmost importance to establish that the item is neither cracked, distorted or overheated. The degree of distortion may be difficult to assess if the precise original dimensions are not known, in which case there is no option but to reject the item. Any suggestion of overheating would be cause for a laboratory investigation into significant change of material properties.

5. Disposal of Scrap Parts and Materials

- 5.1 Those responsible for the disposal of scrapped 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 parts 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 specifications set forth by the approved design, and cannot be brought into conformity with applicable specifications;
- (c) Parts and materials for which further processing or rework cannot make them eligible for certification under an approved system;
- (d) Parts are subjected to unacceptable modifications 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 to extreme forces or heat (see paragraph 4 and 5 above); and
- (g) Principal structural elements removed from a high cycle aircraft for which conformity cannot be accomplished by complying with the mandatory requirements applicable to aging aircraft.

5.2 Scrapping of parts and materials may not be appropriate in certain cases when there is an ongoing evaluation process to determine whether a part or material may be restored to an airworthy condition. Examples of these cases include the extension of life limits, the re-establishment of in-service history records, or the approval of new repair methods and technologies. In these cases, such parts should be segregated from serviceable parts until the decision has been made as to whether these parts can be restored to an airworthy condition, or be scrapped.

5.3 Scrapped parts should always be segregated from serviceable parts and when eventually disposed of should be mutilated or clearly and permanently marked. This should be accomplished in such a manner that the parts become unusable for their original intended use and unable to be reworked or camouflaged to provide the appearance of being serviceable.

5.4 When scrapped parts are disposed of for legitimate non-flight use, such as training and education aids, research and development, or for non-aviation applications, mutilation is often not appropriate. In such cases, the parts should be permanently marked indicating that they are not serviceable; alternatively, the original part number or data plate information can be removed or record kept of the disposition of parts.

6. Methods to Prevent Misrepresentation of Scrap Parts and Materials

6.1 Persons disposing of scrap aircraft 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 rethreading long bolts, welding, straightening, machining, cleaning, polishing, or repainting.

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

- (a) Grinding;
- (b) Burning;
- (c) Removal of a major lug or other integral feature;

- (d) Permanent distortion of parts;
- (e) Cutting a hole with cutting torch or saw;
- (f) Melting;
- (g) Sawing into many small pieces.

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

- (a) Stamping (such as a stamped 'R' on a part);
- (b) Spraying with paint;
- (c) Hammer marks;
- (d) Identification by tag or markings;
- (e) Drilling small holes;
- (f) 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.

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

- 6.2.1 Permanently marking or stamping the parts, subparts, and material as 'NOT SERVICEABLE'. (Ink stamping is not an acceptable method);
- 6.2.2 Removing original part number identification;
- 6.2.3 Removing data plate identification;
- 6.2.4 Maintaining a tracking or accountability system, by serial number or other individualised data, to record transferred scrap aircraft parts and materials; and
- 6.2.5 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 lifelimited parts and materials should not be passed on to any person or organisation who may end up placing the parts and materials back in actual use, due to the criticality of parts and material failure and the potential safety threat.*

6.3 Organisations handling scrap or expired lifelimited aircraft parts and materials should establish a quarantine store area in which to segregate such items from active serviceable inventories and to prevent unauthorised access. Caution should be exercised to ensure that these parts and materials receive the disposition specified in this Notice.

6.4 Manufacturers producing approved aircraft parts should consider maintaining records of serial numbers for 'retired' lifelimited 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.

7. Method to Identify Misrepresented Parts

All purchasers of aircraft parts and materials should ensure that misrepresented scrap parts and materials are not received into active inventory. The following are examples of conditions to be alert for when receiving parts:

- (a) Parts showing signs of rework which were purchased as 'new'.
- (b) Used parts showing signs of unapproved or inappropriate repair.
- (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 or suspicious Technical Standard Order or FAA Parts Manufacturer Approval markings and/or re-identification, stampovers or vibroetching on the data plate.
- (g) Parts delivered with photocopied or missing CAAB Form 1 or other acceptable maintenance 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 for mutilated parts with identical weight and content.

An approved organisation or Certifying Staff or Support Staff who receives suspect parts should report to the CAAB as detailed in GM-SUP.