



## **SAFETY ALERT 05/2014**

**Issued: 30 June 2014**

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### **SUBJECT:**

**SUSPECTED UNAPPROVED PARTS AND PARTS REMOVED FROM AIRCRAFT NO LONGER IN SERVICE OR INVOLVED IN ACCIDENTS**

### **REFERENCE PUBLICATION(S):**

ICAO Doc. 9760  
CAR M  
CAR 145

### **CATEGORY:**

Recommendation

### **REASON:**

Recently, the GCAA has received a report about a Suspected Unapproved Part (SUP) related to an APU. Though the case is still under investigation by the FAA, the GCAA would like to emphasise on the need for UAE Operators and Approved Maintenance Organisations to ensure that sufficient dispositions are in place to prevent **inadvertent introduction of SUPs** in the aviation system. This Safety Alert aims to provide recommendations to UAE industry, following the preliminary investigation of the above SUP case, to ensure:

- a) Preventive measures are in place in the process of:
  - i. Acceptance of parts with respect to SUPs in addition to requirements set out in CAR 145.42, and
  - ii. Release to service of parts removed from an aircraft no longer in service, and parts recovered from aircraft involved in accidents in addition to requirements set out in CAR 145.50; and
- b) Reporting mechanism of SUPs to the GCAA.

### **APPLICABILITY:**

UAE Operators and Approved Maintenance Organisations



## **1.0 Introduction**

1.0.1 Documentary evidence of compliance with an approval process will not in itself provide a guarantee against the installation of a suspected unapproved part if the original supplier of such a part knowingly provided false information or otherwise sets out to deceive.

1.0.2 It is always necessary to have secondary defences in place designed to give early warning of suspected unapproved parts prior to their release for installation. The primary defense in such cases is a strong, well-informed and alert parts ordering and receiving system which through vigilance / auditing establishes a satisfying level of confidence in the parts supplied.

1.0.3 This Safety Alert should be read in conjunction with ICAO document 9760 and the information contained on the [FAA website](#).

## **2.0: Types of parts & materials that may be considered as suspected unapproved**

Organisations / persons disposing of scrap aircraft parts and materials should consider the possibility of such parts and materials being provided to the aviation industry with false information designed to deceive and exercise caution to ensure these organisations / persons involved in the disposal of parts are required to do so in a controlled manner in order that they may not be allowed to be returned to service.

2.0.1 Organisations / persons when receiving suspected parts should exercise standard stores procedures and quarantine the suspected parts until all issues surrounding these parts are resolved.

2.0.2 Unapproved parts may include those parts improperly returned to service, for example:

- a) Parts supplied directly to the end user by a contractor without direct ship authority from the design approval holder and the State of Manufacture to do so;
- b) Parts maintained or approved for return to service by a person or organisation not approved to do so;
- c) Parts not maintained in accordance with the requirements of the applicable approved data; and
- d) Parts having reaching their life limit, including, if applicable, any shelf-life limit.



### **3.0: Precautions to be considered to prevent the inadvertent acceptance of suspected unapproved parts**

All purchasers of aircraft parts and materials should ensure that suspected scrap parts and materials are not received into active inventory. The following are examples of conditions that could raise alert levels to the possibility of the existence of suspected unapproved parts during the receiving process:

1. Parts showing sign of rework which were purchased as “new”
2. Used parts showing sign of unapproved or inappropriate repair.
3. Parts with poor workmanship or signs of rework in the area of the part data plate, number or serial number inscription.
4. Used parts lacking verifiable documentation of history and approval.
5. Parts with prices that are ‘too good to be true’
6. Questionable part numbers, fraudulent or suspicious TSO, ETSO or FAA PMA markings and/or re-identification, stamps or vibro-etching on the data plate.
7. Parts delivered with photocopied or missing FAA 8130-3, JAA /EASA Form 1 or other acceptable release documentation.
8. Parts with a finish that is inconsistent with industry standards (e.g. discoloration, inconsistencies, resurfacing)
9. Parts purchased as new but with release documentation reflecting a status or other than new
10. Parts with poor documentation exhibiting incomplete or inconsistent part identity information.
11. Intact ‘scrap’ unsalvageable parts offered in bulk weight for prices higher than mutilated parts with identical weight and content
12. Parts that have a delivery time than one significantly shorter than those quoted by the supplier.
13. Life limited parts that have reached or exceeded the life limit
14. Parts that have been exposed to extreme forces thus rendering them unserviceable.



15. Principle Structure Elements (PSEs) removed from high-cycle aircraft for which conformity cannot be accomplished by complying with mandatory requirement applicable to ageing aircrafts

#### **4.0 Suspected unapproved part reporting**

4.0.1 The ROSI system is the initial reporting line for any suspected unapproved parts received by an operator / organisation and must be read in conjunction with the content of CAAP 22. The Engineering Safety Section within the authority shall then report the occurrence to the type certificate holder and the relevant regulatory authority in an effort to provide widespread warning of the detection on suspected unapproved parts so that the operators of similar equipment can be made aware of the parts circulating as soon as possible.

4.0.2 The ROSI system along with the guidance material in CAAP 22 is used as the standardised reporting method along with an appropriately filled form [AWF-SUP-001](#).

#### **5.0 Supporting documentation expected to be with a part**

5.0.1 It is considered essential that organisations should ensure that a documentation process providing written evidence of the acceptability of a part is an important element of any system designed to ensure that only approved parts are received and installed on an aircraft. Such a process is intended to provide all relevant information and confidence concerning the part to which it refers sufficient to enable a potential installer to readily ascertain its status.

5.0.2 Such Documents may contain information relating to:

- a. The authority under which it is issued
- b. Reference identification for the purposes of traceability
- c. Name and address and approval reference of the issuing organisation
- d. A work order, contract or invoice number
- e. Quantity, description, part number and if applicable serial number of the part
- f. Relevant information concerning any life limitations including in service history records
- g. A serviceable tag denoting all the relevant information concerning the part

5.0.3. Any part not supported by the appropriate documentations (examples mentioned above) may be subject to investigation action.



## **6.0 Parts removed from an aircraft no longer in service**

6.0.1 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.

6.0.2 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 Mandatory Continued Airworthiness Instructions (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.

6.0.3 It is important that the part removal process, which is documented into the CAR 145 Maintenance Organisation Exposition (MOE), 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;
- f) A protected and enclosed quarantine storage area for the parts being removed should be provided in the immediate vicinity of the work area; and
- h) Normal maintenance documentary controls should be used, e.g. the use of work sheets or cards to record component removals, and label identification to show serviceability status.

6.0.4 An assessment for condition and eventual return to service of each removed part will need to be conducted by a suitably approved organization. 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.



## **7.0 Parts recovered from aircraft involved in accidents**

7.0.1 When an aircraft has been involved in an accident, the title to the salvage may pass from the insured aircraft owner to other persons (e.g. aircraft insurers); this salvage may be offered for sale either complete or as separate aircraft items in an “as is, where is” condition. 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 may not be returned to service.

7.0.2 Before overhaul and reinstallation can be considered, all such items must therefore be subject to airworthiness 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 (as per CAR 145.50, which provides additional guidance).

7.0.3 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 of course crack the item, 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 not 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.