



SIERRA LEONE CIVIL AVIATION AUTHORITY

ADVISORY CIRCULAR

SLCAA-AC-AIR017Rev.01

Authenticity and Serviceability of Aircraft Parts

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Director General

Sierra Leone Civil Aviation Authority

1. Purpose

This Advisory Circular (AC) provides guidance and information to be used by Operators, Aircraft Maintenance Engineers, and Approved Maintenance Organizations on the authenticity and serviceability of aircraft parts when evaluating an operator's Maintenance support

2. Description of Changes

This AC is the Second Issue and therefore supersedes the First Issue

3. References

ICAO Doc 9760

4. Guidance and Procedures

4.1 General Information

Although there is no regulatory requirement for the Industry to report un-approved parts to the Authority, it is required that the industry consults this Authority when in doubt.

4.2 Verification

When a report of suspected un-approved parts is received, the operator shall establish exactly why such parts are suspected of being un-approved prior to forwarding such reports to other authorities. A traceability check must be done to establish the source of the part and to verify authenticity of the associated documentation and shipment details (where applicable).

4.3 Approved Part

An approved part is one whose design has been found to be acceptable to the State of Design, whose proper manufacture has been approved by the State of Manufacture, and that has been found to be in a condition for safe operation by the Authority.

4.4 Un-Approved Parts

Un-approved parts not meeting the criteria described in 3.3 above are considered to be un-approved. Any part not supported by the required documentation would also be considered to be un-approved. Un-approved parts also 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 organization 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

4.5 Reporting Findings

If there is evidence to prove the part is not genuine or if the part is suspected of being un-approved, inspectors shall note down all relevant details in standardized reporting format that will include the following;

- (a) Source of information on suspected un-approved part

- (b) Specific location where part was found.
- (c) Details of suspected part (i.e. part number, serial number) etc
- (d) Particular colors, markings, dimensions and features common to the un-approved part which distinguish it from the genuine item; and the nature of any accompanying documentation.
- (e) Information on how part was accepted into the AMO system (where applicable)
- (f) Corresponding reference in manufacturer's Illustrated Parts Catalogue (IPC) on the genuine part details
- (g) If found in service, details relating to part fitment and certifying personnel
- (h) Any other relevant information

4.5.1 Using the information gathered, inspectors should make an analysis and provides details to the Airworthiness Manager. Where it is very evident the part is un-approved, it should be immediately isolated for safety reasons. Even in cases where there is doubt on the origins of a part, it should be removed from service and isolated until a conclusion is reached.

4.5.2 The operators shall report SUP to the Authority, the State of design, State of manufacture and the Type Certificate Holder.

4.5.3 The Airworthiness manager shall ensure reports relating to un-approved or bogus parts are reported to;

- a) State of Design
- b) Type Certificate Holder
- c) State of Registry

4.5.4 Reporting may be done by electronic mail (e-mail), fax of any other means viewed to be most appropriate. For record and follow-up purposes, reporting must be in writing at all times.

4.5.5 If there is reason to believe these parts could have been acquired from a un-approved parts distributor or from a source that may continue to supply suspected parts, the Airworthiness manager shall ensure this is communicated to the industry through the most appropriate means and without delay.

4.5.6 A Successful reporting system should accept false alarms and the wasted effort they generate in the knowledge that to discourage them might eventually lead to the suppression of a genuine report.

5. Un-Approved Parts Reporting

5.1.1 Systems used by end users, to report to the Manufacturer / Type Certificate holders and the Authority, are intended to provide widespread warning of the detection of un-approved parts so that operators of similar equipment can be made aware as soon as possible. In view of the likely random appearance of un-approved parts, access to reporting system must be easy and available at all reasonable times. It follows that publicity for the reporting system (and programmes generally) should be widespread.

5.1.2 In order to obtain as much information as possible from a report of a suspected un-approved part, it is necessary to have a standardized reporting format. Information required will include part description and from where received; part number and (if applicable) serial number; particular

colours, markings, dimensions and features common to the un-approved part which distinguish it from the genuine item; and the nature of any accompanying documentation.

- 5.1.3 At any time, a part is deemed to be suspect, it and the accompanying documentation, if any, should be quarantined immediately and held until the body responsible for processing the reports is satisfied that the evidence is no longer required or until the authenticity of the part has been established.
- 5.1.4 Some reports of suspected un-approved parts will eventually turn out to be false as further information becomes available in the form of supporting documentation etc. A successful reporting system should accept such false alarms and the wasted effort they generate in the knowledge that to discourage such reports might eventually lead to the suppression of a genuine report.
- 5.1.5 Form: AC-AWS017 shall be completed and uploaded to SLCAA services voluntary/mandatory reporting system.

6. Parts Stockists and Distributors

- 6.1.1 It is recognized that parts stockists and distributors have a significant influence over the control of un-approved parts. Such organizations have an established commercial role of stocking or obtaining parts, often at short notice. Some States approve stockists and distributors but others do not.
- 6.1.2 In airworthiness terms, the parts supplier's role is simply that of a holder of a part and its supporting data for a limited period, the part and data being passed in their entirety to the purchaser. The most effective control is exercised by the purchaser of the parts by ensuring that the part is correct and that the documentation truly reflects the status of the part. Further assurance is provided by the installer purchasing only from those suppliers having a known satisfactory record.

7. Parts Removed From an Aircraft No Longer In Service

- 7.1.1 Aircraft withdrawn from service are often used as a source of spare parts. 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.
- 7.1.2 It is important that the 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 approved 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 area.

7.1.3 An assessment for condition and eventual return to service for 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, depending on the factors mentioned in 6.2 range from a simple external visual inspection to a complete overhaul.

8. Parts Recovered From Aircraft Involved In Accidents

8.1.1 When an aircraft has been involved in an accident, the title may pass from the insured owner to other persons (e.g. aircraft insurers); this salvage may be offered for sale either complete or as separate 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.

8.1.2 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.

8.1.3 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 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.

8.1.4 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.

9. Control of Unserviceable Parts

9.1.1 A part shall be considered unserviceable in any one of the following circumstances:

- (a) expiry of the service life limit as defined in the maintenance program;
- (b) non-compliance with the applicable airworthiness directives or other continuous airworthiness requirement mandated by the Airworthiness Authority;
- (c) absence of the necessary information to determine the airworthiness status or eligibility for installation;
- (d) evidence of defects or malfunctions;
- (e) Involvement in an incident or accident likely to affect its serviceability.

Note: Unserviceable parts must be identified and stored in a secure location until a decision is made on the future status of such parts.

10. Disposal of Scrapped Parts

10.1.1 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 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 7.0); and
- (g) Principal structural elements removed from a high-cycle aircraft for which conformity cannot be accomplished by complying with mandatory requirements applicable to aging aircraft.

10.1.2 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, such as by re-plating, short peening and rethreading long bolts, welding, straightening, machining, cleaning, polishing, or repainting.

10.1.3 Mutilation may be accomplished by one or a combination of the following procedures:

- (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,
- (h) Any other method accepted by the airworthiness authority on a case by case basis.

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

- (a) stamping or vibro-etching,
- (b) spraying with paint,
- (c) small distortions, incisions or hammer marks,
- (d) identification by tag or markings,
- (e) drilling small holes,
- (f) Sawing in two pieces only.

10.1.5 Since manufacturers producing approved parts should maintain records of serial numbers for “retired” certified life-limited or other critical parts, the organization that mutilates a part should

provide the original manufacturer with the data plate and/or serial number and final disposition of the part.

10.1.6 When scrapped parts are disposed of for legitimate non-flight uses, 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.

10.1.7 The following methods should be used to prevent the part re-entering the aviation supply system:

- (a) Permanently marking or stamping the part, as “NOT SERVICEABLE.” (ink stamping is not an acceptable method)’
- (b) removing original part number identifications;
- (c) removing data plate identification;
- (d) maintaining a tracking or accountability system, by serial number or other individualized data, to record transferred unsalvageable aircraft parts;
- (e) Including written procedures concerning disposal of such parts in any agreement or contract transferring such parts.

Note: Unsalvageable parts should not be released to any person or organization that is known to return unsalvageable parts back into the aviation supply system due to the potential safety threat.



**SIERRA LEONE CIVIL AVIATION
AUTHORITY**
Suspected Unapproved Parts Report

Form No: AC-AWS017rev0

Refer to page 2 for instructions on how to complete this form.

1. Case Start Date:		2. Part Name:	
3. Part Number:		4. Part Serial Number:	
5. Part Model/ Manufacturer:	6. Next Higher Assembly:	7. Next Higher Assembly Pin:	
8 Application:		9. Quantity:	
10. Case Status:		11. Part Critically Category:	
12. Action Office:		13. Law Enforcement Involvement:	
14. Aircraft Group:		15. Aircraft Make/Model/Series	
16. Name & Address of Person/CO under Investigation:			
17. Name & Address of the Physical Location where the Part was Found			
18. SUP Reported by:		19. Date SUP Discovered	
20. SLCAA Hotline Case:		21. Reporter Anonymous:	
22. Reporter confidential:		23. SUP Case Number:	
24. Connecting Cases:		25. Description of SUP event/ Complaint (Narrative):	
26. Status of Investigation:		27. Investigation Result (Narrative):	
28. Case Result:		29. Unapproved Part Issue:	
30. Field Notification:		31. Enforcement Activities:	
32. Investigation Completed by:		33. Directorate/Regional Approval:	
34. Active Office Review:		35. Total Hours for Investigation:	

APPENDIX 2. INSTRUCTION

1.	Case Start Date:	The date the investigation commence
2.	Part Name:	Identify the name of the part. When multiple parts are involved, add them to the second page.
3.	Part Number:	Part number or any other number on part. When multiple parts are involved, and them to second page.
4.	Part serial number:	Serial number on part.
5.	Part mode/Manufacturer:	Manufacturer(s) part i.e. GE, Raytheon, etc
6.	Next Higher Assembly:	The assembly the part is installed on.
7.	Next Higher Ass’y PN:	Part number of the assembly.
8.	Application:	Choose one application for the part.
10.	Case status:	Reflect open/closed investigation
11.	Part Criticality Category:	As defined by Manufacturer
12.	Action Office:	Reflect the investigating office
13.	Law Enforcement Involvement:	Indicate LEA involvement
14.	Aircraft Group:	Choose the one that is most applicable for the part(s)
15.	Aircraft Make/Model/Series:	List all aircraft on which the unapproved part may be installed.
16.	Name & Address of person/Co. Under Investigation:	This reflects the current focus of the investigation. The SUP investigation is to update/change as necessary
17.	Name & Address of the physical Location Where the Part was Found:	Location where the SUP was found
18.	SUP Reported by:	To be completed by Personnel that made the report
19.	Date SUP discovered:	Date that SUP was discovered.
20.	SLCAA Hotline Case#:	Provide hotline number if applicable
21.	Reporter Anonymous:	Reflect reporter is anonymous.
22.	Reporter confidential:	Reflects reporter desired to remain confidential.
23.	SUP Case number:	The case number assigned to the SUP
24.	Connecting Cases:	Reflect common/connected cases.

25.	Description of SUP Event/ Complaint (Narrative)	Describe SUP allegation.
26.	Status of Investigation:	Reflects status of investigation
27.	Investigation Results (Narrative)	Write a short narrative to include results, findings etc, continue on back of form and additional sheets as necessary.
28.	Case Result:	Applies to the case. If an unapproved part is confirmed during investigation the case closure will be reflected as unapproved part case.
29.	Unapproved Part Issue:	If it is unapproved part case choose one that best fits the investigation outcome.
30.	Field Notifications:	Check all that apply to the case.
31.	Enforcement Activities:	Insert the enforcement investigation report number.
32.	Investigation Completed by:	Reflects the investigating Aviation Safety Inspector
34.	Airworthiness Manager Approval:	Signature of Airworthiness Manager
35.	Total Houses for Investigation:	Record the current total number of hours used for the investigation (update as necessary) investigators, support staff, SUP Coordinator, etc.