



Circular Técnica

CT-330-04

SUBJECT: AIRCRAFT PARTS

DATE: 25/06/2025

SECTION 1 GENERAL

1.1 OBJECTIVE

This Technical Circular (TC) provides information and guidance on the requirements for the reporting of unapproved parts, guidelines for the proper usage of parts removed from aircraft and guidelines for the disposal of scrapped parts for aircraft registered in Sao Tomé and Principe and granted a Certificate of Airworthiness.

1.2 APPLICABILITY

This Technical Circular applies to owners and operators of aircraft registered in São Tomé and Príncipe and to any persons maintaining such aircraft and parts thereof.

1.3 REFERENCES

- (a) RAC STP Part 21 - Airworthiness.
- (b) RAC STP Part 145 - Approved Maintenance Organization.
- (d) ICAO Doc 9760 - Airworthiness Manual, Chapter 9.
- (e) Form F-330-28 - Suspected Unapproved Parts Notification

1.4 CHANGES

This is an original issuance of this TC.

1.5 INTRODUCTION

1.5.1 Misrepresented or unapproved scrap parts and materials that have been fitted to aircraft or included in aircraft components is a significant problem worldwide and has been the cause of several incidents and accidents.

1.5.2 RACSTP 21.K.105 requires that all parts, components appliances and materials to be installed in an aircraft registered in Sao Tome and Príncipe shall conform to the certification standards of the applicable Type Acceptance Certificate and any applicable Supplemental Type Certificate.

1.5.3 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.

1.5.4 It is essential that for the purposes of continuing airworthiness a system of control exists which ensures that only parts meeting the approved design data applicable to a particular aircraft are installed on that aircraft. This TC provides guidance for the establishment of such a system.



SECTION 2 AUTHENTICITY AND SERVICEABILITY OF AIRCRAFT PARTS

2.1 DEFINITIONS

2.1.1 Approved Parts

2.1.1.1 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 State of Registry.

2.1.1.2 Standard parts such as fasteners are considered as approved parts when they are in compliance with a national- or industry-accepted standard and when referenced in the type design of the particular aircraft.

2.1.2 Unapproved Parts

Parts not meeting the criteria described in 2.1.1.1 and 2.1.1.2 are considered to be unapproved. Any part not supported by the required documentation would also be considered to be unapproved. Unapproved parts also include those parts improperly returned to service, such as:

- (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.

2.1.3 Scrap

Products and articles an owner has disposed of because they are beyond economical repair, considered to be of little value, or unusable for any other aviation reason. Scrap products and articles are placed into four categories:

- (a) Products and articles that have no value except for the base material.
- (b) Products and articles whose misuse in aviation poses an insignificant safety risk.
- (c) Products and articles that were used in low-risk, safety aviation applications and may have future use in non-aviation applications.
- (d) Products and articles that were used in safety-critical aviation applications and may have future use in non-aviation applications

2.2 PRECAUTIONS TO PREVENT THE INADVERTENT ACCEPTANCE OF UNAPPROVED PARTS

2.2.1 Positive identification of unapproved parts can be difficult if the parts display characteristics similar to that of an “approved part.” The following guidelines offer a means by which “approved parts” (and their sources) may be assessed.

2.2.2 Documentary evidence of compliance with an approved process will not in itself provide a guarantee against the installation of unapproved parts if the original supplier of such parts knowingly provides false information or otherwise sets out to deceive.

2.2.3 It is always necessary to have secondary defences in place designed to give early warning of unapproved parts prior to their release for installation. The primary defence in such cases is a strong, well-informed and alert parts ordering and receiving system which, through auditing and reports, establishes a satisfactory level of confidence in its parts suppliers.

2.2.4 Aircraft owners, operators and maintenance organisations shall ensure that appropriate steps are taken to preclude the introduction of unapproved parts into inventories or their installation on aircraft by establishing an incoming/receiving inspection system to ensure that only approved parts and materials are received into inventories.

2.2.5 Procurement process. A procedure to prevent procurement of unapproved parts should be established prior to purchasing parts and materials for installation in type certificated products. This procedure should include the following as a minimum:

- (a) Methods to establish qualified suppliers who are authorized to manufacture and distribute parts they supply.
- (b) Criteria to identify and screen potential unapproved parts suppliers. These criteria should include the following considerations:
 - (1) The quoted price or the price advertised in trade magazines is significantly lower than the price quoted by other suppliers of the same part.
 - (2) A delivery schedule that is significantly shorter than that of other suppliers of the same part when existing stocks are exhausted.
 - (3) The inability of a supplier to provide drawings, specifications, overhauls manuals, or substantiating data demonstrating the conformity of the part's repair/overhaul.
 - (4) A distributor and/or supplier's inability or unwillingness to provide substantiating documentation that the part was produced pursuant to an NAA's approval; or inspected, repaired, overhauled, preserved or modified in accordance with the regulations.
 - (5) Sales quotes or discussions that create the perception that an unlimited supply of parts, components, or material are available to the end user.

2.2.6 Acceptance procedures. These procedures should include a means of identifying suspected unapproved parts during the receiving inspection and prevent their acceptance. The areas to be addressed should include the following:

- (a) verification of supporting documentation and review of shipping tickets, packing slips, purchase orders, or markings identifying the approved manufacturer of that part/material. Be alert for any unauthorized alterations to supporting documentation and to any inability of the supplier to supply the required documentation;
- (b) Continual correlation between parts ordered and parts received. Verify that the actual part and delivery receipt reflect the same information as the purchase order regarding part number, serial number, and historical information, if applicable.
- (c) Recognition of the parts packaging methods used by approved parts manufacturers, maintenance organizations and distributors, to detect deviations from these methods. Confirmation that the packaging of the part identifies the supplier or distributor and is free from alteration or damage.
- (d) Verification that the parts received was produced under some type of State of Design or manufacture-approved process (e.g. authorizing document containing a declaration that the part was produced under the production approval, certifications for standard parts (such as bolts and nuts) or other evidence that they conform to established industry specifications.)
- (e) Verification that the parts are supported by an authorized internationally-accepted release certificate issued by an approved AMO or equivalent organization acceptable to the INAC:
- (d) Confirmation that the shelf life and/or life limit has not expired, if applicable.
- (e) Conduct random sampling of standard hardware packaged in large quantities in a manner which corresponds to the type and quantity of the parts.
- (f) Conduct a visual inspection of the part and supporting documents to the extent necessary to determine if the part is traceable to an approved source.

- (g) Segregate parts of questionable nature and attempt to resolve issues regarding questionable status of part. For example, obtain necessary documentation if inadvertently not provided, or determine if irregularities are a result of shipping damage and handle accordingly.

2.2.7 The following are examples of conditions to be alert for when performing visual inspection of parts:

- (a) Parts with prices that are 'too good to be true';
- (b) Parts showing signs of rework which were purchased as 'new';
- (b) Used parts with visible irregularities showing signs of unapproved or inappropriate repair;
- (c) Parts with poor workmanship;
- (d) Parts with identification plates tampered with, with signs of rework in the area of the part data plate, part number or serial number (for example, serial number stamped over, label or part/serial numbers improper or missing, vibrio-etch or serial numbers located at other than the normal location).
- (e) Used parts lacking verifiable documentation of history and approval;
- (g) Questionable part numbers, fraudulent or suspicious TSO, ETSO or FAA PMA markings and/or re-identification, stamp-overs or vibrio-etching on the data plate;
- (h) Parts delivered with photocopied or missing release certificates (refer to RAC Part 21 Subpart K);
- (i) Parts with a finish that is inconsistent with industry standards (e.g. discoloration, inconsistencies, resurfacing, altered or unusual surface, absence of required plating, evidence of prior usage, scratches, new paint over old, attempted exterior repair, pitting or corrosion).
- (j) Parts purchased as new but with release documentation reflecting a status other than new;
- (k) Parts with poor documentation exhibiting incomplete or inconsistent part identity information;
- (l) Intact 'scrap' unsalvageable parts offered in bulk weight for prices higher than for mutilated parts with identical weight and content.

2.2.8 At any time a part is deemed to be suspect, it and any accompanying documentation should be quarantined immediately and held until the report assessing body is satisfied that the evidence is no longer required or until the authenticity of the part has been established.

2.2.9 Organizations, particularly approved maintenance organizations and operators, should ensure that all those staff who have routine contact with parts, especially including buyers, stores staff, mechanics and certifying staff, are fully aware of the dangers posed by unapproved parts and also the likely sources. Ample warnings should be given to such staff about accessing any unapproved parts database. Approved maintenance organizations and operators will also need to ensure that their parts suppliers are fully integrated into the reporting network, and audits will be necessary among staff at intervals to ensure that all remain vigilant to the problem.

2.2.10 Supplier evaluations. Procedures to conduct audits of suppliers on a scheduled basis, to ensure that suppliers have established and continue to maintain the quality system specified in purchase orders, should be developed. The following are examples of elements that should be included in an audit program:

- (a) Continued validity of the national civil aviation authority's approval, if applicable;
- (b) Design data control, to include latest revision, if applicable;
- (c) Supplier control;
- (d) Material handling/control;
- (e) Manufacturing/assembly controls;

- (f) Tool and gauge control;
- (g) Tests and inspections;
- (h) Records.

2.3 REPORTING PROCEDURES

2.3.1 Reports of suspected unapproved parts may originate from numerous sources such as incoming/receiving inspections, audits, facility surveillance, complaints, accident, or incident investigations, or various service difficulty reports.

2.3.2 Users of aircraft parts and material are reminded that suspected misrepresented/unapproved parts must be reported to INAC through the Mandatory Occurrence Reporting scheme as defined in RACSTP Part 21 and to the relevant Type Certificate holder.

2.3.3 To assist in tracing misrepresented/unapproved parts and materials, persons raising an MOR should as far as possibly provide the following information on their report:

- (a) The name of the suspected unapproved part;
- (b) Part number, or any other number on the part;
- (c) Serial number;
- (d) List the next higher assembly that the suspected unapproved part is assembled into and list the part number, if known;
- (e) Quantity of suspected unapproved parts found or identified;
- (f) Make and model number of the aircraft or component that the suspected unapproved part is applicable to;
- (g) The identification of the commercial source of the suspected unapproved part. If the part is identified with the Part Manufacturer or Distributor marking this should be quoted;
- (h) the nature of any accompanying documentation.
- (h) Describe any pertinent facts relating to the suspected unapproved part and identify where the part may be inspected (provide invoices, photos, particular colors, markings, dimensions and features common to the unapproved part which distinguish it from the genuine item etc. If available. The use of abbreviations should be kept to a minimum, unless used universally);
- (i) The date the suspected unapproved part was discovered;
- (j) Name and address in full or the location where suspected unapproved part(s) was discovered.

Note: Physical parts should not be submitted to INAC.

2.3.4 To assist in reporting SUPs, the INAC has produced a Form F-330-028 Suspected Unapproved Parts Notification. This form provides a standardised format which facilitates the submission of complete data and reduces the time and cost associated with processing the reports.

2.3.5 An electronic version of INAC Form F330-028 is available for download from INAC web site (<http://www.inac.st>). A duly completed form can be submitted to the Authority:

- (a) By mail to the following address:

Instituto Nacional de Aviação Civil (INAC), POBox 97
Att: Flight Safety Department
Bairro do Aeroporto – Sao Tomé
Sao Tomé and Príncipe

- (b) By fax (when confidentiality is not required) or e-mail:

Fax: (00239) 2 241450

2.4 USED PARTS REMOVED FROM SERVICEABLE AIRCRAFT

2.4.1 Serviceable aircraft parts removed from an aircraft may be issued with an acceptable release certificate by an appropriately approved and rated RACSTP Part 145 maintenance organization subject to the compliance with the following:

- (a) The donor and recipient aircraft must be on the Sao Tome and Príncipe register.
- (b) The donor aircraft must be in an airworthy condition or in a controlled maintenance environment.
- (c) The aircraft must have a valid certificate of airworthiness.
- (d) The donor and recipient aircraft must be from the same operator's fleet.
- (e) The organization should ensure that an appropriately qualified person removed the part from the aircraft using approved data and the tooling specified.
- (f) The removal takes place in a hangar or if conducted in the open, disassembly should cease during inclement weather;
- (g) Adequate access equipment should be provided;
- (h) All open connections should be blanked;
- (i) The part may only be considered eligible if the last flight operation with the part fitted revealed no faults on that part or related system.
- (j) The part should be inspected for satisfactory condition including, in particular, damage, corrosion or leakage and compliance with any additional manufacturer's maintenance instructions and the requirements of the aircraft's maintenance program.
- (k) The aircraft records should be reviewed for any unusual events that could affect the serviceability of the part such as involvement in accidents, incidents, heavy landings or lightning strikes. A RACSTP Part 145 acceptable release certificate should not, in any circumstances, be issued if it is suspected that the part has been subjected to extremes of stress, temperature or immersion, which could affect its operation.
- (l) A maintenance history record to include flight hours/cycles/landings as applicable should be available for all used serialized and life limited parts including details of scheduled maintenance requirements derived from the donor aircraft maintenance program and maintenance planning schedule.
- (m) Compliance shall be established with any continued airworthiness instructions for applicable modifications (changes) and repairs for the robbed component/part by incorporating the continued airworthiness requirements into the recipient's aircraft maintenance program and maintenance planning schedule.
- (n) The flight hours/cycles/landings as applicable of any service life limited parts including time since overhaul should be established and the details of service life remaining should be transferred to the recipient aircraft records.
- (o) Compliance with known applicable Airworthiness Directives should be established and maintained particularly where non terminating action had previously been taken.
- (p) Where applicable, mandatory reporting such as CPCP and SSID records shall be transferred including any pending actions associated with a modification or supplemental inspection regime.
- (q) A modification status review shall be undertaken of the recipient aircraft and component/part to ensure eligibility for fitment.
- (r) Consideration shall be given to undertaking a component/system functionality test.

- (s) Under no circumstances shall a donor aircraft be fitted with an unserviceable component/part in order to make a recipient aircraft serviceable.
- (t) Components/parts shall not be removed for the purpose of storage pending the identification of a suitable recipient aircraft.
- (u) 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.

2.4.2 Subject to the satisfactory compliance with items (a) to (q) above an acceptable airworthiness release certificate may be issued and should contain the following information:

- (a) The details pertaining to the donor aircraft (Type, Registration, Serial number etc).
- (b) When the last major maintenance event was carried out and by whom.
- (c) If the component is unused, when the component was manufactured and by whom with a cross-reference to any original documentation which should be included with the form.
- (d) A list of all airworthiness directives, repairs or modifications known to have been incorporated. If no airworthiness directives, repairs or modifications are incorporated then this should be stated.
- (e) Detail of life used for service life limited parts being any combination of fatigue, overhaul or storage life.
- (f) For any part having its own maintenance history record, reference to the particular maintenance history record.
- (g) The location of the donor and recipient aircraft.
- (h) The component/part description, part number and serial number.
- (i) Component/part original release certificate number and the State of Authority if details available.
- (j) Details pertaining to the recipient aircraft (Type, Registration, Serial number etc) (k) Remarks (installation requirements, functional testing, adjustment, modification, life limitation, mandatory compliance, inspection, reactivation etc).
- (l) Maintenance manual references.
- (m) The service release certificate shall include the following statement "The work recorded has been carried out in accordance with the RAC STP Part 145 and in respect of that work the aircraft or component is fit for release to service".
- (n) The signature of the certifying staff, aircraft maintenance organization approval or authorization number and date of entry.

2.5 PARTS REMOVED FROM AN AIRCRAFT NO LONGER IN SERVICE

2.5.1 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.

2.5.2 The requirements specified for the removal of parts from a serviceable aircraft and issuance of an airworthiness release, as described in in 2.4, apply to parts removal from an aircraft no longer in service, except that it is recognised that the aircraft may not be in airworthy condition and the certificate of airworthiness may not be valid.

2.5.3 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, in addition to those specified in 2.4 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.
- (g) 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.

2.5.4 An assessment for condition and eventual return to service of each removed part will need to be conducted by a RACSTP Part 145 approved maintenance organization. The extent of the work necessary before the part is returned to service may, depending on the factors noted in 2.5.1, range from a simple external visual inspection to a complete overhaul.

2.6 PARTS RECOVERED FROM AIRCRAFT INVOLVED IN ACCIDENTS

2.6.1 It is recognized that, in some instances, such as wind damages, or accidents involving only certain sections of the aircraft the hull loss may be considered total, but parts of the aircraft could still be considered usable. The title to the salvage may pass from the insured aircraft owner to other persons (e.g. aircraft insurers) who may offer it for sale either complete or as separate aircraft items in an "as is, where is" condition. These parts and components may be made available to the aviation industry as replacements and their use made attractive by virtue of their lower cost.

2.6.2 It must be emphasized that parts involved in an accident can be of questionable serviceability and possibly unable to perform their intended function. 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.

2.6.3 It is not contrary to the civil aviation regulations to reuse some parts involved in accidents however prudence and common sense, along with airing on the side of safety must prevail. Before overhaul and reinstallation can be considered, all such items must 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.

2.6.4 These parts must be subjected to a thorough and detailed inspection by a properly qualified person. If maintenance is required it must be performed and documented in order to prove, conclusively, that it conforms to the applicable airworthiness requirements, prior to approving the part for return to service. The person doing the work must use the methods, techniques, and practices prescribed in the current manufacturer's maintenance manual or in the manufacturer's instructions for continued airworthiness.

2.6.4 The following are some of the reasons these parts must be thoroughly inspected before they can be approved for return to service:

- (a) Parts may have been subject to excessive heat thereby affecting their original strength and dimensions;
- (b) All parts involved in a fire are almost always rendered permanently unserviceable regardless of their rejuvenated appearance.
- (c) Foreign or corrosive liquids, including salt water, can take their toll on aircraft parts even if exposed to these liquids for a very short period.

- (d) Parts that have been deformed or subject to unknown or unmeasurable forces such as sudden stoppage that are impossible to detect by external visual inspection that could permanently render the part unserviceable.

2.6.5 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 overheating 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.

2.6.6 Standard aircraft parts, such as bolts and nuts, can possibly be reused provided there is no damage to the part or the finish. However, parts like self-locking hardware, such as plastic or fibre locknuts, spring type lock washers and cotter pins should never be reused.

2.7 DISPOSAL OF SCRAP AIRCRAFT PARTS AND MATERIALS

2.7.1 Disposed scrap parts and materials may, in some instances, reappear for sale in the serviceable parts inventories within the aviation community. Such misrepresentation of the status of parts and material and the practice of making these items appear serviceable could result in the use of non-conforming parts and material. The owner's/operator's permission should be sought prior to the disposal of scrap parts and materials. Caution should therefore 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 outside the specifications set by the approved design and cannot be brought into conformance with the applicable specifications.
- (c) Parts and materials where further processing or rework cannot make them eligible for certification.
- (d) Parts subjected to rework or unacceptable modification 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
- (g) Principal Structural Elements removed from a high-cycle aircraft for which conformity cannot be accomplished by complying with the mandatory requirements applicable to ageing aircraft.

2.7.2 Scrapped parts should always be segregated from serviceable parts, and when eventually disposed of, should be mutilated or clearly and permanently marked.

2.7.3 Persons disposing of scrap parts and material should, when appropriate, mutilate those parts and materials prior to disposal. Mutilation should be such that the parts and materials become unusable for their original intended use. It should also not be possible for them to be reworked or camouflaged to provide the appearance of being serviceable for example by re-plating, shortening and re-threading long bolts, welding, straightening, machining, cleaning, polishing or repainting.

2.7.4 Mutilation may be accomplished by one or a combination of the following procedures, but 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;

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(g) Sawing into many small pieces.

2.7.5 The following are examples of mutilation that are often less successful since they may not be consistently effective:

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

(f) Sawing in two pieces since it may be possible to attempt to restore parts cut in two pieces in such a manner that the mutilation proves difficult to detect.

2.7.6 For the disposal of scrap aircraft parts and materials for legitimate non-flight uses, such as training and education, research and development, or non-aviation applications 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'. Ink stamping is not an acceptable method;
- (b) Removing original part number identification;
- (c) Removing the data plate;
- (d) Maintaining a tracking system, by serial number or other individualized data, to record transferred scrap aircraft parts and material, and
- (e) Include written instructions concerning disposition and disposal of such parts and materials in any agreement or contract transferring the parts and materials.

Aprovado pelo Presidente do Conselho de Administração do INAC	
Data: <u>25 / 07 / 25</u>	 António dos Santos Lima (Jurista)