



Advisory Circular

Subject: Guide for Developing a Receiving Inspection System for Aircraft Parts and Material

Date: 12/12/05

AC No: 20-154

Initiated by: AFS-300

1. PURPOSE. This advisory circular (AC) provides guidance and information for incorporation into operators' existing receiving/inspection systems to help prevent the introduction of unairworthy parts into inventories. The aim is to establish sufficient traceability to establish that the part(s) were manufactured under Title 14 of the Code of Federal Regulations (14 CFR) part 21, were previously determined to be airworthy under 14 CFR part 43, produced to established industry or U.S. Government standards or accepted foreign standards. Like all AC material, this AC is not mandatory and does not constitute a regulation. It is issued for guidance and to outline a method of compliance with the rules. This is one means but not the only means for developing a receiving inspection system. In lieu of following the method(s) prescribed herein, the applicant may elect to follow an alternate method.

2. APPLICATION. These elements are recommended for incorporation into operators' existing receiving/inspection systems to help prevent the introduction of unairworthy parts into inventories. The aim is to establish sufficient traceability to establish that the part(s) were manufactured under part 21, were previously determined to be airworthy under part 43, and produced to established industry or U.S. Government standards or accepted foreign standards.

3. REGULATIONS AND GUIDANCE MATERIAL.

a. Related 14 CFR Parts Include:

- (1) Part 1, Definitions and abbreviations.
- (2) Part 21, Certification procedures for products and parts.
- (3) Part 43, Maintenance, preventive maintenance, rebuilding, and alteration.
- (4) Part 45, Identification and registration marking.
- (5) Title 49, Other regulations relating to transportation.

b. Related Guidance Materials Include (current editions):

- (1) AC 00-56, Voluntary Industry Distributor Accreditation Program.
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- (2) AC 20-62, Eligibility, Quality, and Identification of Aeronautical Replacement Parts.
- (3) AC 21-20, Supplier Surveillance Procedures.
- (4) AC 21-29, Detecting and Reporting Suspected Unapproved Parts.
- (5) AC 43-9, Maintenance Records.
- (6) AC 45-2, Identification and Registration Marking.
- (7) AC 145-7, Issuance of Repair Station Certificates to Foreign-Approved Maintenance Organizations Under the Maintenance Implementation Procedures of a Bilateral Aviation Safety Agreement.
- (8) AC 145-9, Guide for Developing and Evaluating Repair Station and Quality Control Manuals.
- (9) Federal Aviation Administration (FAA) Order 8120.11, Disposition of Scrap or Salvageable Aircraft Parts and Materials.
- (10) FAA Order 8130.2, Airworthiness Certification of Aircraft and Related Products.
- (11) FAA Order 8130.21, Procedures for Completion and Use of the Authorized Release Certificate, FAA Form 8130-3, Airworthiness Approval Tag.

NOTE: Interested persons can access ACs and orders on the FAA home page at www.faa.gov and selecting Regulations and Policies then selecting the link for Advisory Circulars or Orders, or at <http://www.airweb.faa.gov/rgl>. Copies of FAA ACs and orders also can be obtained free of charge from the U.S. Department of Transportation, Subsequent Distribution Office, Ardmore East Business Center, 3341 Q. 75th Ave., Landover, MD 20785.

4. BACKGROUND. The FAA has expressed ongoing concern that unairworthy appliances, components, or parts thereof, as well as materials, are being installed on type-certificated products. Therefore, the FAA recommends that parts installers, maintainers, manufacturers, or suppliers establish an enhanced receiving inspection system to help eliminate the safety risk posed by unairworthy components, parts, or materials. A comprehensive network of regulatory controls governs the design, manufacture, installation, and maintenance of aircraft parts. However, whether by inadvertent or deliberate action, components or parts have been reported that do not meet regulatory requirements and are not eligible for installation. Maintenance providers should have a procedure describing their processes for procuring, receiving, and inspecting aircraft components, parts, and materials. These procedures will ensure conformity to the type design or specifications to ensure that the product being returned to service conforms to specified airworthiness requirements and is in a condition for safe operation.

5. DEFINITIONS.

a. Airworthy.

(1) The aircraft must conform to its type certificate (TC). Conformity to type design is considered attained when the aircraft configuration and the components installed are consistent with the drawings, specifications, and other data that are part of the TC, which includes any Supplemental Type Certificates (STC) and field-approved alterations incorporated into the aircraft.

(2) The aircraft must be in a condition for safe operation. This refers to the condition of the aircraft relative to wear and deterioration, for example, skin corrosion, window delamination/crazing, fluid leaks, and tire wear, etc.

b. Approved Part. A part or part thereof that was designed, fabricated, produced, and/or maintained under the appropriate regulation. This could include the following:

(1) Produced in accordance with a Parts Manufacturer Approval (PMA) issued under part 21, subpart K.

(2) Produced in accordance with a Technical Standard Order Authorization (TSOA) issued under part 21, subpart O.

(3) Produced during the TC application process under part 21, subpart B, or the STC application process under part 21, subpart E, prior to the issuance of the certificate; subsequently determined to conform to the approved TC or STC data (refer to part 21, section 21.303 (b)(1)).

(4) Produced under a TC without a separate production authorization, and an Approved Production Inspection System (APIS), in accordance with part 21, subpart F.

(5) Produced under a Production Certificate (PC) (including production by a “licensee” if produced under PC authority), in accordance with part 21, subpart G.

NOTE: A licensee is a person who has exclusive or nonexclusive rights to apply for a PC (refer to part 21, section 21.133(a)(2)) under “licensing agreement,” if they hold or have been awarded rights to the benefit of a TC holder from the owner of the TC. The term licensing agreement does not imply or infer that a PC holder may grant production approval to any party on behalf of the FAA. Authority granted by a PC holder to a supplier to ship parts directly to a customer of the PC holder is NOT considered to be a licensing agreement.

(6) Manufactured in accordance with an approval under a bilateral airworthiness agreement under part 21, subpart N, approval of engines, propellers, materials, parts, and appliances for import.

(7) “Standard parts” has come to be understood by the aviation and manufacturing public as meaning a part, the specification for which has been published by a standard-setting organization or by the U.S. Government, and the FAA has traditionally regulated parts production with that understanding. Examples of such “traditional” standard part specifications include National Aerospace Standards (NAS), Air Force-Navy Aeronautical Standard (AN), Society of Automotive Engineers (SAE), SAE Aerospace Standard (AS), and Military Standard (MS). The FAA considers parts conforming to these standards as standard parts. For a specification to be acceptable, it must include information on the design, materials, manufacture, and uniform identification requirements. The specification has to include all the information necessary to produce the part and ensure its conformity to the specification. Furthermore, the specification must be publicly available, so that any party is capable of manufacturing the part. The above examples of accepted specifications fulfill those criteria.

(a) In the past the FAA has applied section 21.303(b)(4) to parts that have specifications when a determination of physical conformity to a design could be made. This application largely excluded classes of parts in which the parts are conformed not on the basis of their physical configuration but by meeting the specified performance criteria. Much of the componentry used in electronic devices are manufactured under standard industry practices, often to published specifications developed by standards organizations such as the SAE, the American Electronics Association, Semitec, Joint Electron Device Engineering Council, and the American National Standards Institute (ANSI). Such standards developed by these bodies is overseen by the Institute of Electrical and Electronics Engineers (IEEE), the IEEE Standards Committee, as well as the electrical and electronics industry, at large, which depends upon characteristic design standards for consistency in operation and performance.

(b) The FAA notified the public in the Federal Register on March 5, 1997 (62 FR 9923) that the interpretation of an acceptable U.S. Government- or industry-accepted specification may include specifications that may be limited to detailed performance criteria, complete testing procedures, and uniform marking criteria. These parts are best exemplified by discrete electrical and electronic parts, which include resistors, capacitors, diodes, transistors, and nonprogrammable integrated circuits (e.g., amplifiers, bridges, switches, gates, etc.). Conversely, large scale, application-specific, or programmable integrated circuits; hybrids, gate arrays, memories, CPUs, or other programmable logic devices would not be considered standard parts and are not discrete.

(8) Parts produced by an owner or operator for the purpose of maintaining or altering their own product. Parts produced and used by the owner/operator cannot be sold separately outside their organization.

(9) A part that is fabricated by an FAA-certificated repair station or other authorized person for use in the performance of an alteration under STC or field approval in accordance with part 43 and FAA Order 8000.50, Repair Station Production of Replacement or Modification Parts. These parts cannot be sold separately and can only be used for their intended purpose.

(10) A part (which is not for sale as a separate part) that is fabricated by a qualified person in the course of a repair for the purpose of returning a type-certificated product to service under part 43.

(11) Approved in any other manner acceptable to the Administrator (see part 21, section 21.305(d)).

NOTE 1: Parts, which have been maintained, rebuilt, altered, or overhauled, and approved for return to service in accordance with parts 43 and/or 145, are considered to be “approved parts.” Parts that have been inspected and/or tested by persons authorized to determine conformity to FAA-approved design data may also be found to be acceptable for installation.

NOTE 2: Military surplus parts (defined as parts which have been originally released as surplus by military, even if subsequently resold by manufacturers, owners/operators, repair facilities, or any other suppliers of parts) may fall under this condition providing they meet the airworthiness requirements for the product to be installed on.

NOTE 3: AC 20-62, Eligibility, Quality, and Identification of Aeronautical Replacement Parts, should be referred to for information regarding eligibility and traceability of replacement parts.

c. Authorized Release Certificate, FAA Form 8130-3, Airworthiness Approval Tag. Form 8130-3 has become recognized as an industry standard form used for the following purposes: Conformity inspections; airworthiness approval of new products, parts, and appliances; Splitting bulk shipments of previously shipped products, parts, appliances; Approval for return to service after maintenance, preventive maintenance, rebuilding, and alterations of products and parts; Export airworthiness approval of Class II and III products. Procedures for the completion and use of Form 8130-3 are contained in Order 8130.21. When using FAA Form 8130-3 as a dual release form, block 13 must contain the following statement: “Certifies that the work specified in block 12/13 was performed in accordance with EASA Implementation Rule part-145 approval, and with respect to that work, the aircraft component is considered ready for release to service under EASA Approval Number: [insert number].”

d. Bilateral Aviation Safety Agreement (BASA). An executive agreement concluded between the United States and a foreign country for the purpose of promoting aviation safety. Also known as an Agreement for the Promotion of Aviation Safety.

e. Commercial and Government Entity (CAGE) Code. A five-position code that identifies contractors doing business with the Federal government, NATO member nations, and other foreign governments. The CAGE Code is used to support a variety of mechanized systems throughout the government and provides for a standardized method of identifying a given facility at a specific location. The Code may be used for a facility clearance, pre-award survey, automated bidders list, identification of debarred bidders, fast pay processes, etc.

f. Direct Ship Authority. Suppliers to a Production Approval Holder (PAH) may ship replacement and modification parts directly to the end user without the parts being originally processed by the PAH or its associate facility's receiving inspection facilities only if the PAH or associate facility:

(1) Authorizes the authority, in writing, to the supplier to ship directly to a user/operator. An individual written authorization is not required for each direct shipment. The authorization may include limitations such as specific part numbers, time periods, or particular user/operators. This authorization will be maintained by the PAH or associate facility for review by the cognizant MIDO/CMO.

(2) Includes in its FAA-approved quality control or inspection system, controls to compensate for the absence of inspection normally conducted at the PAH's or associate facility's location, e.g., receiving inspection and test. Compensating factors should include on-site evaluations of the supplier and the inspection of the part at the supplier by:

(a) The PAH or associate facility, or

(b) The supplier under a delegated inspection authority from the PAH or associate facility.

(3) Ensures that each part shipped is accompanied by a shipping ticket, invoice, or other document containing a declaration that the individual part was produced under the terms of the production approval, and the inspection/acceptance has been accomplished by either the PAH/associate facility or by delegated inspection authority. The shipping document for parts manufactured under PMA, PC, APIS, and TC should identify the product on which the part is eligible for installation. The shipping document for subcomponents manufactured for TSO articles should contain the TSO number. When FAA Form 8130-3 is used for this purpose, the direct ship authorization will be annotated in accordance with FAA Order 8130-21.

(4) Provides the appropriate part marking information to the supplier.

(5) Advises its cognizant MIDO/CMO of each direct ship authorization.

g. Distributors. Brokers, dealers, resellers, or persons engaged in the sale of parts for installation on type-certificated products.

NOTE: In an effort to provide owners and operators of aircraft a readily available guidance for determining acceptability of components and parts, the FAA published AC 00-56, Voluntary Industry Distributor Accreditation Program. This AC describes a system for the accreditation of civil aircraft parts distributors on the basis of voluntary industry oversight and provides information that may be used for developing accreditation programs. The FAA strongly endorses participation in such a program to improve the ability of certificated persons to establish the eligibility of parts for installation on type-certificated products. Purchasers conducting business with participants in this program should not be discouraged from

implementing their own procurement and acceptance procedures (as outlined in AC 00-56). The Aviation Suppliers Association maintains a listing of participants in the voluntary program at the following Web site: <http://www.aviationsuppliers.org>.

h. European Aviation Safety Agency (EASA). An agency of the European Union, which has been given specific regulatory and executive tasks in the field of aviation safety and environmental protection. This agency therefore constitutes a key part of the European Union's strategy to establish and maintain a high level of civil aviation safety and environmental protection in Europe. EASA is located at: Ottoplatz, 1, D-50679 Koeln, Germany. The postal address is: Postfach 10 12 53, D-50452 Koeln, Germany. Telephone [49 221] 89990 0000, facsimile [49 221] 8999 099 or e-mail info@easa.eu.int. When the EASA Form 1 is used as a dual release, block 13 must contain the following statement, "This civil aeronautical product has been [*maintained, altered, or modified, as appropriate*] in accordance with United States Federal Aviation Regulations under FAA certificate No _____."

i. Export Certificate of Airworthiness (C of A). A certificate issued by the National Aviation Authority (NAA) of the country of export. The Joint Aviation Authority (JAA) Airworthiness Approval Form 1 (JAA Form 1 are valid if dated prior to 11/28/04), European Aviation Safety Agency (EASA) Form 1 (valid after 11/28/04), and Transport Canada Airworthiness Approval Tag (Form 24-0078) are examples of acceptable forms if the country of origin currently has a Bilateral Airworthiness Agreement (BAA) with the United States that provides for U.S. recognition of replacement parts produced in that country.

j. Inspection. The act of testing or checking a product or part thereof against established standards to assure it conforms to its design requirements and is in a condition for safe operation. Inspection could include documentation review, visual inspections, bench or functional tests, preservation (condition), packaging, technical data, or shelf life limits are a few examples to consider. Technical data could include, but is not limited to, Maintenance Manuals, Structural Repair Manuals, Type Certificate Data Sheets, Airworthiness Limitations, Manufacturer's Service Documents, Service Bulletins, or Engineering Data.

k. Life-Limited Part. Any part for which a mandatory replacement limit is specified in the type design, the Instructions for Continued Airworthiness (ICA), or the maintenance manual.

NOTE: An audit trail tracing a life-limited part back to its origin would only be required when the operator's records are not complete enough for an accurate determination of the elapsed time on the part to be established. A request for such an audit trace would probably be the exception (Federal Aviation Decisions, Interpretation 1992-35).

l. Maintenance Implementation Procedures (MIP). Procedures for implementing the provisions of a BASA that applies to maintenance.

m. Production Approval Holder (PAH). A holder of a PC, an APIS, a Parts Manufacturer Approval (PMA), or a Technical Standard Order Authorization (TSOA), who controls the design and quality of the product or part thereof.

n. Receiving Inspection Area. An area where parts and materials are initially received and evaluated to determine their airworthiness status and are inspected for conformity prior to acceptance into the serviceable stock area.

o. Serviceable Stock. Components, parts thereof, materials, or appliances that have been evaluated in accordance with the FAA-approved or accepted data and has been determined to be eligible for installation on type-certificated products.

p. Signature. An individual's unique identification used for accepting a component or part thereof, material, or appliance received or inspected under its receiving inspection system. A signature may be handwritten, in the form of an inspection stamp, electronic, or any other form specified to be acceptable under its receiving inspection system.

q. Supplier. Any person who furnishes aircraft parts, materials, or other related services at any tier, to the PAH of the product or part thereof.

r. Traceability. The ability to establish that a part or material was manufactured under part 21, or were previously determined to be airworthy under part 43. Possible sources for making a traceability determination could be shipping tickets, invoices, parts markings (i.e., PMA, Technical Standard Order Authorization (TSOA)), data plates, serial/part numbers, manufacturing production numbers, maintenance records (which could include log book entries), work orders, or any other means acceptable to make a sound determination of airworthiness or any other means acceptable to the Administrator to make a sound determination of airworthiness.

NOTE: Caution should be exercised when receiving a "Certificate of Compliance" that has a statement such as, "document with traceability to the manufacturer available upon request" does not alone establish traceability to the PAH.

s. Vendor. Any person or business establishment engaged in the sale or transfer of parts for installation in appliances or type-certificated aircraft, aircraft engines, propellers, or appliances.

6. DEVELOPING THE RECEIVING INSPECTION SYSTEM PLAN. This recommended receiving inspection system plan is intended to help prevent the entry of unairworthy parts into inventories and therefore preclude their subsequent installation. The plan describing a receiving inspection system should be detailed to the extent that it meets all its objectives and expectations to ensure identification and traceability. Operators and air agencies should consider the scope of their operation's complexity for the development of and enhancing their receiving inspection system. The system should be commensurate with the privileges and limitations of the operation. Appendix 1 contains a suggested receiving inspection system checklist derived from the contents in this AC and Appendix 2 provides a suggested flow chart for making a documentation requirement determination. Departments within the operator or air agency, such as purchasing, auditing, maintenance, etc., should be made aware of the enhanced receiving inspection requirements through training or other documented procedural means. The following are suggested minimum elements that may be considered for incorporation into the written receiving inspection system plan:

a. Responsible Person(s). The responsible person should ensure that all incoming materials such as standard parts, components, or parts thereof, articles, equipment, and materials are acceptable for use on type-certificated products. In addition, the responsible person(s) should be identified in the plan and given authority for ensuring continuing quality control for all functions of the receiving and inspection written procedures and established standards.

b. Internal Quality Audit. Used to evaluate ongoing conformity with the receiving inspection system. Persons performing the quality audit as part of the evaluation program may be employed by or an agent to the operator or company. The objective of the internal quality audit process is to ensure that the receiving inspection system in place is adequate for its intended function and meets all the regulatory requirements, as well as satisfies the needs of the operator.

c. Training. Training of all receiving and inspection personnel is to ensure personnel have a thorough understanding of the receiving inspection system. The training syllabus should include as a minimum; recognition in part identification, determining current status of the part, conformance determination of the part, regulatory compliance requirements, inspection procedures, handling, storage, ordering procedures, bench or functional testing, and recordkeeping requirements. All training should be documented and personnel training records established and maintained during the period of employment. Recurrent training should be implemented for familiarization of practices and any changes to procedures, regulations, or policies.

d. Technical Data. Ensure currency, applicability, and adequacy for making proper evaluations. A procedure should be established to ensure that technical data is current in accordance with the regulations or manufacturers recommendations. This includes, but is not limited to, data such as:

- (1) Type Certificate Data Sheets (TCDS);
- (2) Airworthiness Directives (AD);
- (3) U.S. or industry specifications;
- (4) Illustrated parts lists or catalogs;
- (5) Maintenance and/or overhaul manuals;
- (6) Structural repair manuals;
- (7) Service bulletins/letters, or other manufacturers technical information;
- (8) Parts markings;
- (9) Engineering drawings;
- (10) Maintenance records/return to service;

- (11) Other applicable data for making an airworthiness determination, etc.;
- (12) Federal aviation regulations; and
- (13) Advisory circular guidance.

e. Measurement/Test Equipment. Precision measurement devices, test equipment, and gauges used to verify conformance to the applicable regulations of sections 43.13 and 145.109(b), industry standards and specifications must be calibrated in accordance with an effective program to maintain accuracy to the standards of the National Institute of Standards and Technology (NIST), manufacturer's specification (to include a foreign manufacture of test equipment) or the standards of another country that is comparable to NIST. Calibration records must be maintained showing established intervals for calibration for each precision measuring device and procedures for taking actions on deficiencies. This would include having a recall system to prevent inadvertent use of uncalibrated equipment.

f. Written Receiving Inspection Procedures. Developing a receiving inspection system can be a difficult task considering the numerous forms and the complexities of the various manufacturers, repair facilities and parts suppliers (distributors) paperwork involved along with the receiving organizations requirements. Written procedures for the receiving and inspection of incoming parts/materials should be developed according to the individual company's or the operator's complexity and regulatory requirements. As an example, the written procedures could include the following items:

(1) Establish minimum training requirements for receiving and inspecting personnel. The training curriculum should be based on the complexity of the organizations needs.

(2) To help minimize confusion, distributors (sellers of parts) should be requested to fill all blank entries with "NA" to signify that the blank box or section is not applicable. The purchasing department should convey its document requirements to all distributors in order to create a smoother flow of parts and material into inventories.

(3) A checklist should be created for receiving inspectors that would clearly identify the origin and traceability "path" of the part or material. This would help reduce confusion and aid accountability within the receiving inspection department.

(4) A method to identify whether the parts were obtained from the primary or secondary vendor. Primary and secondary vendors are determined by the purchaser on the vendor's compliance with the operator's needs and performance for supplying the appropriate parts and materials. At times, it may be feasible to review the required documents before purchase of the item via an electronic means.

(5) A means should be created to recognize when parts are to be substituted or substitution parts may be used. The substituted parts should be reflected in the articles maintenance records and include substantiating equivalency approval data. The installer must determine that the substitute part meets all regulatory requirements.

(6) A method should be developed with instructions explaining how to perform comprehensive visual inspections of parts and materials received, including checks for obvious physical damage, defects, state of preservation, and that appropriate quantities have been received.

(7) A means to verify that all part, model, serial numbers, etc., as appropriate, match the accompanying documentation, such as packing slips, invoices, certificates of conformance, work orders, maintenance release tags or purchase orders.

(8) To ensure parts are free from contamination or damage, verify that all appropriate plugs, caps or safety devices are installed as required by the manufacturer and that shipping container or packing is appropriate for items received or to be shipped.

(9) If applicable, a method should be created to identify dangerous goods that are flammable, toxic, or volatile materials received to ensure that they are packaged and stored in a safe manner, either per manufacturer's recommendations or as specified by regulatory requirements. Segregation procedures should be established for these types of materials and for any other items for which segregation is appropriate.

(10) When applicable, a method should be included to examine materials subject to damage from electrostatic discharge (ESD). Materials should be packaged, handled, and protected in accordance with requirements for handling ESDs. Training for ESD recognition, handling, and processing should be accomplished and records maintained in the receiving inspection-training file or the individual employee's training file. In addition, procedures should be defined prescribing periodic checks/inspections on ESD mats and wrist straps in accordance with the manufacturers recommendations.

(11) Procedures explaining how to segregate and identify serviceable parts from unserviceable parts and maintaining documentation for traceability. The storage area for serviceable aircraft parts should be periodically checked (audited) for overall effectiveness of storage and identification methods of parts in inventory. The serviceable parts area should be controlled to prevent unintentional or unauthorized stocking of parts, materials or components that have not been received through the system. Identified unserviceable (questionable) parts should be properly secured in a segregated area pending proper disposition of the part.

(12) Develop a procedure to control bulk shipments of identical parts to ensure traceability to the producer of the item(s), i.e., PAH, standard parts, or raw material(s), etc. Whenever possible, original packaging should remain with the parts or materials for identification purposes. This would be used for identifying the producer and lot or batch number as applicable, until installed or sold.

(13) Develop a procedure to identify and properly store shelf and life-limited parts, environmentally sensitive/temperature sensitive materials such as epoxy resins, pre-preg composite materials, or sealants as an example. This procedure should ensure that outdated parts or materials are not inadvertently installed. Procedures should be in place to track the expiration date of and to explain how to segregate or dispose of them once their useful life has expired.

(14) Establish a means to verify whether any ADs are applicable to the any components or parts thereof received.

(15) When inspection stamps are used, a control system should be established to govern their issuance and use.

(16) Procedures to ensure incoming parts/materials affectively apply to the products being maintained.

g. Hazardous Material (Dangerous Goods Program). Hazardous materials (known internationally as dangerous goods) are found in many aircraft parts and also in substances used in the aviation industry. Because there have been instances in the past when companies have shipped hazardous materials in violation of the regulations, the regulations require hazardous material training for certain employees. A company's hazardous materials program should address the company's needs for training as well as its internal procedures for handling and transporting hazardous material. The principle applicable regulations are found in Title 49 of the Code of Federal Regulations (49 CFR) parts 171, 172, 173, and 175, which prescribe requirements applicable to aircraft operators, maintenance providers, distributors, and anyone else who may ship hazardous materials. These regulations address a wide range of topics, such as developing a training program, properly identifying hazardous materials, packaging hazardous materials, shipping hazardous materials, and air carrier acceptance of hazardous materials. Additional regulatory guidance on training programs for certain types of certificate holders can be found in 14 CFR parts 121, 135, and 145. At a minimum, any hazmat employer should have a program that covers proper packaging, marking, labeling, classification, description, and documentation of shipments of hazardous materials, as well as compliance with the appropriate regulations that apply to the particular hazardous material-related functions undertaken at the company.

NOTE: The Hazardous Materials Safety Recommendations are available from the Department of Transportation Web site at: <http://hazmat.dot.gov>.

h. Part/Material Documentation/Identification. Procedures should clearly state and/or illustrate the documentation or other means of identification that would be acceptable for receiving parts or material from different types of vendors. The following are possible sources, but not the only sources, for determining airworthiness:

(1) Shipping ticket, invoice, or other documents from the PAH.

(2) Parts markings such as PMA, TSO, data plates, serial numbers, part numbers, manufacturing production numbers, etc.

(3) Letter of Direct Ship Authority issued to the supplier by the PAH.

(4) Maintenance release document(s) that meets 14 CFR part 43 signed by an appropriately certificated person, qualified for the relevant function that signifies the item was approved for return to service after maintenance, preventative maintenance, rebuilding, or

alteration. Records could also reflect the removal of parts/components or appliances from a type-certificated product.

(5) Airworthiness Approval Form 8130-3 used for export approval, conformity determination from the PAH, or approval for return to service after maintenance or alteration by an authorized part 145 repair station or the holder of an air carrier operating certificate issued under part 121 or 135. Export Certificate of Airworthiness, JAA Form 1 (invalid if dated after 11/28/04), Transport Canada Form 24-0078, and EASA Form 1 (effective on 11/28/04) provided the United States has a current Bilateral Airworthiness Safety Agreement (BASA) and Maintenance Implementation Procedures (MIP) with the exporting country. Part or material certification forms such as ATA Form 106, or a material certification form verifying that the standard parts conform to established industry or United States specifications, could be provided.

i. Part Evaluation. The evaluation should include a review of any usage history supplied with the part at the time of purchase, which could include accumulated time/cycles, remaining time/cycles, alterations, and/or repairs. Part verification could also include part number, serial number, symbols, manufacturing marks, identification stamps, etchings, casting codes, bar codes, dates, or lot numbers. Any item (indicators such as manufacturing numbers) unique to a particular manufacturer could assist in providing traceability to a PAH. The manufacturer's system for identification during the manufacturing process is not always available to the end user. However, such information is often obtained by contacting the manufacturer.

j. Unsalvageable Parts/Material. Establish written procedures for mutilating "scrapped" parts to an extent that precludes the possibility of them ever being used for their original intended purpose. The disposition of scrap parts should be documented and retained for an appropriate period of time.

NOTE: FAA Order 8120.11, Disposition of Scrap or Unsalvageable Aircraft Parts and Materials, provides information and guidance for control of rejected parts and materials.

k. Unserviceable Parts. Parts that may have exceeded approved repair limits, time, or cycle limits, etc. If unserviceable parts are to be retained for possible future use, procedures should specify that they are to be segregated from serviceable parts. It is recommended that all documentation remain with these parts for possible later return to service, which could be because new approved repair procedures were later developed or the manufacturer extended time life extensions.

l. Segregation. At times, articles received may lack appropriate documentation or other supporting data necessary to show that the regulatory requirements were met. These requirements would include findings to show that the part was produced and/or maintained properly. Segregate those parts of questionable nature from serviceable parts until a sound determination can be made of their status and prevent them from subsequently being installed.

7. RECEIVING INSPECTION PROCEDURES FOR PARTS AND MATERIALS

TEMPLATE. The following receiving inspection procedures provide information and guidance for developing and/or evaluating a receiving inspection system. These procedures set forth one

means, but not the only means, for receiving parts or materials into inventories. In addition, Appendixes 1 and 2 provides a comprehensive overview of the material presented in the body of this AC. To meet the needs of their specific organizations, the users, as appropriate, may modify the checklists (Appendix 1) and the logic chart (Appendix 2).

a. Acceptance of New Parts Manufactured by FAA-Certificated Sources. Receiving personnel should ensure that new parts produced by FAA-certificated sources are accompanied by the referenced documents or other information:

(1) **PC Holders.** Invoice, packing list, or equivalent documentation (normal shipping documents), stating the part number(s) and corresponding quantities in each shipment.

(2) **STC Holder.** Normal shipping documents, documentation that identifies the part as an STC part and the production authority under which the part was produced.

(3) **TSOA Holder.** Normal shipping documents, documentation and/or markings that identify the part as a TSO part.

(4) **PMA Holder.** Normal shipping documentation and/or markings that identify the part as an FAA-PMA part. The part or packaging must be marked "FAA-PMA."

(5) **APIS Holder.** Normal shipping documents, other documentation and/or data plates that identify the product as being produced under a TC only with an Approved Production Inspection System.

(6) **Letter of Direct Ship Authority Authorization.** Evidence that authority was given to the supplier from the PAH to ship parts directly to the customer, which may have a statement on the purchase order stating that the part/s "were produced under FAA approved manufacturing and quality control systems/methods as set forth in the FAA Production Certificate."

b. Acceptance of New Parts From Non-FAA Certificated Sources. Receiving personnel should ensure that the distributor (seller) provides sufficient documentation to show traceability to one of the following:

(1) A copy of shipping tickets, packing lists, invoices and/or other documents providing evidence that the origin of the part is from an FAA PAH or that the original acquisition was from an FAA-approved source.

(2) A copy of the written letter of direct shipment authorization that includes a statement that those parts were produced in accordance with the PAH quality system.

(3) A copy of the Certificate of Conformance (C of C) (i.e., standard parts). This certificate should identify the acceptable standard to which the part was produced.

(4) A copy of the return to service from FAA-approved foreign repair stations and/or FAA certificated sources.

(5) The return to service entry under part 43 maintenance record entry.

(6) A return to service record entry from an FAA-certificated air carrier operating under part 121 or 135.

c. Acceptance of Used, Repaired, or Overhauled Parts from FAA-Certificated Sources.

One or more of the following should accompany parts approved for return to service procured from FAA-certificated sources:

(1) Repair station work order.

(2) FAA Form 8130-3, Airworthiness Approval Tag, JAA Form 1 (prior to 11/28/04), EASA Form 1 (after 11/28/04), or Transport Canada Form 24-0078.

(3) FAA Form 8130-3, Authorized Release Certificate, Airworthiness Approval Tag; JAA Form 1 (prior to 11/28/04); EASA Form 1 (after 11/28/04); or Transport Canada Form 24-0078.

(4) Air carriers operating under parts 121 or 135 return to service maintenance record entry; part 145 repair station return to service maintenance record entry that the repair station is authorized to perform.

(5) Part 145 repair station return to service maintenance record entry that the repair station is authorized to perform.

(6) Parts/components maintained under part 43 return to service release.

d. Acceptance of Used, Repaired, or Overhauled Parts from Non-FAA Certificated Sources. Parts procured from non-FAA certificated sources, such as distributors, should be accompanied by one of the following:

(1) A return to service maintenance record entry from an FAA-certificated air carrier operating under part 121 or 135;

(2) A return to service maintenance record entry from an FAA-certificated air agency operating under part 145; or

(3) The return to service entry from the certificated entity that performed the original repair or overhaul under part 43.

e. Acceptance of Parts from Foreign Sources. The need to maintain aircraft and components outside the United States has continued to expand along with an increase in the rise of foreign-manufactured aeronautical products used by U.S. operators and repair facilities. Receiving personnel should ensure they receive the proper documents with parts that were repaired or manufactured from foreign sources.

f. Acceptance of Life-Limited or Time-Controlled Parts from Any Source. Procedures for accepting life-limited or time-controlled used parts into an inventory system require special attention due to safety ramifications. In addition to the documentation listed in paragraphs 8(a), (b), (c), or (d) receiving inspection personnel should ensure that life-limited and time-controlled

parts are accompanied by the following documentation to substantiate the time remaining on the part:

- (1) The accumulated total time or remaining hours, cycles, and/or calendar times, whichever time limit applies to the part;
- (2) AD status;
- (3) Modification status (i.e., service bulletins, technical bulletins), if applicable;
- (4) All major repairs, alterations, and modifications, which may have been accomplished;
- (5) Any usage/storage history, which may result in an adjustment to the remaining life of the part; and
- (6) Record of work accomplished during the last maintenance, repair, overhaul, or alteration performed.

8. SUSPECTED UNAPPROVED PARTS (SUP). SUP reports originate from many different sources, such as being detected during incoming receiving inspections; facility audits or surveillance; complaints; Congressional inquiries; or from accident or incident investigations. The FAA's policy is to encourage voluntary disclosure of information affecting aviation safety, such as SUPs. Although reports may be made anonymously, the submission of the reporter's name is requested to enable the FAA to gather additional information if needed and provide confirmation and/or follow up to the reporter. AC 21-29, Detecting and Reporting Suspected Unapproved Parts, provides updated information and guidance to the aviation community for detecting SUPs and the procedures for reporting them to the FAA. FAA Form 8120-11, Suspected Unapproved Parts Notification Form, serves as a standardized means of reporting. Additional information and guidance can be found at the:

a. SUP Program Office Web site at <http://www.faa.gov/avr/sups>.

b. Federal Aviation Administration
Suspected Unapproved Parts Program Office, AVS-20
13873 Park Center Road, Suite 165
Herndon, VA 20171

Phone: (703) 668-3720

Fax: (703) 481-3002

c. FAA Aviation Safety Hotline at (800) 255-1111.

d. Questions or comments regarding a SUP-related issue may also be directed to the SUP Program Office by electronic mail at 9.sups@faa.gov.

12/12/05

AC 20-154

Original signed by John M. Allen for
James J. Ballough
Director, Flight Standards Service

APPENDIX 1. RECEIVING INSPECTION SYSTEM CHECKLIST**RECEIVING INSPECTION SYSTEM CHECKLIST**
RESPONSIBLE PERSON

Y N N/A

1. Receiving/inspection personnel listed on company roster by position and name?
2. Inspection functions authorized for named individual identified?
3. Individual trained to perform authorized functions, by name?
4. Individual issued a letter or stamp for functions authorized to perform?

TRAINING

Y N N/A

1. Individuals' training records documented?
2. Training records on file and subject(s) covered?
3. Part/material identification procedures?
4. Procedures for identifying current status of part/material?
5. Procedures for making a quality determination of the part/material?
6. Understand regulatory compliance requirements?
7. Inspection procedures for individual's intended function?
8. Proper handling procedures?
9. Proper storage procedures?
10. Ordering procedures?
11. Functional testing procedures?
12. Inspection procedures, i.e., visual, bench check, etc., for airworthiness determinations?
13. Recordkeeping requirements?
14. Use of inspection stamps and control procedures?
15. Hazardous materials (hazmat) procedures?

TECHNICAL DATA

Y N N/A

1. Current?
2. Applicable?
3. Adequate?
4. Production Approval Holder (PAH) design data?
5. Type certificate data sheet (TCDS)?
6. Airworthiness Directives (ADs)
7. U.S. or Industry Specifications?
8. Illustrated parts lists or catalogs?
9. Maintenance manuals?
10. Structural repair manuals?
11. Overhaul Manuals?
12. Service Bulletins/Letters
13. Operator's Federal Aviation Administration (FAA) approved maintenance program/requirements?
14. Manufacturer's specifications?
15. Code of Federal Regulations?

APPENDIX 1. RECEIVING INSPECTION SYSTEM CHECKLIST (Continued)

- 16. Advisory circulars?
- 17. Engineering orders?

MEASUREMENT/TEST EQUIPMENT

Y N N/A

- 1. Calibration to National Institute of Standards and Technology (NIST) Standards or other accredited calibration facilities recognized to follow MIL-STD-45662A, current standards such as ISO 10012-1, ISO Guide 25 (17025), ANSI/NCSL Z540-1, or country of TC manufacturer?
- 2. Current calibrations specifications for equipment to be calibrated?
- 3. Proper storage?
- 4. Procedures to prevent past due measuring/test equipment from being used?

RECEIVING INSPECTION SYSTEM

Y N N/A

- 1. Written procedures?
- 2. Internal quality audit procedures?
- 3. Signature procedures?
- 4. Procedures for checking for physical damage and defects?
- 5. Preservation procedures?
- 6. Procedures for quantities received controls?
- 7. Verification procedures for part/model/serial numbers?
- 8. Documentation matches part(s)/material(s) received?
- 9. Storage area for serviceable parts/materials?
- 10. Is batch segregation maintained to assure traceability to the part/material producer?
- 11. Procedures for keeping parts/materials with original packaging?
- 12. Storage area for unserviceable parts/materials?
- 13. Procedures to identify serviceable parts from unserviceable parts?
- 14. Serviceable parts area secured to prevent unauthorized cannibalizing of components?
- 15. System to assure proper control of shelf life-limited parts/materials?
- 16. Reference system for determining status of ADs?
- 17. System to control inspection stamps, if used?
- 18. Segregation maintained for requiring additional testing, i.e., flammability?
- 19. Flammable, toxic, or volatile material procedures for storage, receiving and appropriate packaging?
- 20. Procedures for verifying all required plugs and caps, etc., are installed?
- 21. Shipping container and packaging appropriate for items received?

ORDERING PROCEDURES

Y N N/A

- 1. Approved vendor/alternate vendor list as revised?
- 2. Special requirements communicated to vendors, such as, documents required?
- 3. Procurement system for ordering FAA approved parts/materials?

APPENDIX 1. RECEIVING INSPECTION SYSTEM CHECKLIST (Continued)**HAZARDOUS MATERIAL**

Y N N/A

1. Hazmat advisory publications?
2. Availability of hazmat related Federal regulations?

DOCUMENTATION IDENTIFICATION

Y N N/A

1. Procedures for determining what types of documentation/identification are acceptable?
2. Shipping ticket, Invoice or other PAH documents?
3. Parts marking such as, Parts Manufacturer Approval (PMA), Technical Standard Order (TSO), data plates, serial numbers, manufacturer's markings?
4. Maintenance release documents?
5. Airworthiness approval forms, i.e., FAA Form 8130-3?
6. Export Certificate of Airworthiness?
7. Part or Material Certification?
8. Retention procedures for original documentation?

SEGREGATION

Y N N/A

1. Area for airworthy parts/materials?
1. Area for non-aircraft parts/materials?
3. Area for questionable parts where further determinations must be made (segregation)?

BULK QUANTITIES

Y N N/A

1. Traceability procedures for same type parts received in large quantities?
2. Procedures for duplicating certificate received with bulk shipment of the same type part?

PART EVALUATION

Y N N/A

1. Review known history?
2. Accumulated time?
3. Accumulated cycles?
4. Calendar time?
5. Major alterations with supporting documentation?
6. Major repairs with supporting documentation?
7. Part markings could include, part number, serial number, casting codes, etc.?

UNSERVICEABLE PARTS/MATERIALS

Y N N/A

1. Mutilating procedures?
2. Retention/segregation procedures for unserviceable parts?
3. Procedures for donating to such entities as schools to be used for training?
4. Procedures for turning parts over to non-aviation related uses?

APPENDIX 1. RECEIVING INSPECTION SYSTEM CHECKLIST (Continued)

REPORTING SUSPECTED UNAPPROVED PARTS (SUPs)

Y N N/A

1. Procedures outlined for detecting SUPs?
2. Procedures outlined for reporting SUPs?

**APPENDIX 2. AIRCRAFT PARTS AND MATERIAL DOCUMENTATION
REQUIREMENTS**

Part Supplier	Part Condition	Rotable, Repairable, Expendable (Note 1, 2, & 3)	Standard Part or Material	Commercial Part or Material
Production Certificate (PC) Holder/Licensee	New/Rebuilt	PC	PC or CS	PS
Parts Manufacturer Approval (PMA), Technical Standard Order Authorization (TSOA) Holder	New/Rebuilt	PS	CS	PS
U.S. Air Carrier, Repair Station, Repair Station located outside the U.S., Production Approval Holder (PAH), Supplemental Type Certificate/type certificate (STC/TC) only	New/Rebuilt	FL or FR	CS	PS
	Repaired	FR	-	-
	Overhauled	FL or FR	-	-
Foreign Carrier/ Repair Station located outside the U.S., Foreign Mfg.	New/Rebuilt	JL or JR	CS	PS
	Repaired	JR	-	-
	Overhauled	JL or JR	-	-
Distributor	Serviceable	PA	CS	PS
Any Source	"AS IS"	PS	PS	PS

Purpose: To identify the minimum documents that should be provided when receiving parts or materials.

APPENDIX 2. AIRCRAFT PARTS AND MATERIAL DOCUMENTATION REQUIREMENTS (Continued)

KEY

- PC** Shipping ticket, Packing Slip, Invoice, etc. from the PC holder/licensee with the PC number listed. Include PAH part number, name, or CAGE Code on the documentation.
Optional: Use FL or JL.
- FL** Federal Aviation Administration (FAA) Form 8130-3 left side signed that lists manufacturers name or CAGE Code. A CAGE Code is a controlled identifier used by the Department of Defenses (DoD) to identify the manufacturer of a part or product produced under a Government contract.
- FR** FAA Form 8130-3 right side signed for return to service. Include approval reference.
XYZ will verify airworthiness and return part to service if form is signed only for work performed.
- JL** Joint Aviation Authorities (JAA) Form 1 (invalid if dated after 11/28/04), European Aviation Safety Agency (EASA) Form 1 (valid after 11/28/04), Transport Canada Form 24-0078, or equivalent form from Bilateral Airworthiness Agreement (BAA) country with left side signed that lists manufacturer name or CAGE Code.
- JR** JAA Form 1 (invalid if dated after 11/28/04), EASA Form 1 (valid after 11/28/04), Transport Canada Form 24-0078, or equivalent form from Bilateral Aviation Safety Agreement (BASA) country with right side signed for return to service. Include approval reference. Item cannot be accepted without BASA unless the person/organization is authorized by the FAA, and is so indicated on the form. operator will verify airworthiness and return part to service if form is signed only for work performed.
- CS** Certification Statement on packing slip or attachment that lists manufacturers name or CAGE code. The statement must indicate the part or material meets the applicable specifications.
Optional: Use Certification of Conformance (C of C), Material Certification, FL or JL.
- PS** Packing slip that lists manufactures name or CAGE code.
Unmarked PMA/Technical Standard Order (TSO) piece parts require FL, FR, JL, or JR. Parts procured "AS IS" will be treated as UNSERVICEABLE until conformity is accomplished.
- PA** Packing slip attachments showing traceability through documentation to an approved source listed in Table 1. Part markings (i.e. part number, mfg. name, PAH stamp, etc.) may be used in lieu of paper documentation.
Optional: Use FL, FR, JL, JR

NOTE for Rotable, Repairable, and Expendable Parts or Components:

- (1) For Life-Limited parts the seller must supply documentation indicating the current status of the part, including items listed in Notes 2 and 3. There must be a sufficient degree of certainty that the parts status is current.**
- (2) For Time Controlled parts the seller must list hours, cycles, and/or days since last overhaul and the record of work accomplished with approval references.**
- (3) Airworthiness Directive (AD) and Service Bulletin (SB) modification status must be provided if applicable.**