

ORDER

8110.54

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

**RESPONSIBILITIES, REQUIREMENTS,
AND CONTENTS**



July 1, 2005

**U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION**

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Initiated By: AIR-140

FOREWORD

In this order we offer guidance on responsibilities, requirements, and content for instructions for continued airworthiness (ICA) as required by Title 14 of the Code of Federal Regulations (14 CFR) § 21.50. We wrote this order for personnel in the Aircraft Certification Service, aircraft evaluation groups, and flight standards district offices who review and accept ICA as required by the regulations.

If you find any deficiencies, need clarification, or want to suggest improvements on this order, send a copy of Federal Aviation Administration (FAA) Form 1320-19, Directive Feedback Information (written or electronically), to the Aircraft Certification Service, Planning and Financial Resources Management Branch, AIR-530, Attention: Directives Management Officer. Form 1320-19 is on the last page of this order. You may also send a copy to the Aircraft Engineering Division, AIR-100, Attention: Comments to Order 8110.54. If you urgently need an interpretation, contact AIR-140 at 405-954-7066. Always use Form 1320-19 to follow up each verbal conversation.

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CHAPTER 1. PURPOSE AND ORDER ADMINISTRATION

1-1. Purpose. This order rescinds previous policy memorandums on interpretation of FAR 21.50B dated August 3, 1982 and August 8, 1983, and shows aircraft/engine certification office (ACO/ECO) and aircraft evaluation group (AEG) staffs how to review and find Instructions for Continued Airworthiness (ICA) acceptable. We also include their responsibilities for these tasks. This order supplements Title 14 of the Code of Federal Regulations (CFR) § 21.50(b) and the appendixes of §§ 23.1529, 25.1529, 27.1529, 29.1529, 31.82, 33.4, and 35.4. From now on, we refer to these 14 CFR sections and appendixes as the “applicable airworthiness regulations.”

1-2. Distribution. Distribute this order to branch levels of the Aircraft Certification Service, Flight Standards Service, and the Office of Aviation Systems Standards in Washington Headquarters; to branch levels in the aircraft certification directorates and regional flight standards divisions; to aircraft evaluation groups; to international field offices and flight standards district offices; to all aircraft certification offices; to the Flight Standards Branch and Aircraft Certification Branch at the FAA Academy; to the Suspected Unapproved Parts Program Office; and to the Brussels Aircraft Certification Staff and Flight Standards Staff.

1-3. Cancellation. This order cancels Order 8110.50, *Submitting Instructions for Continued Airworthiness for Type Certificates, Amended Type Certificates and Supplemental Type Certificates*, dated October 20, 2003.

1-4. Related Publications (Latest Revisions). See appendix 8.

1-5. Definitions. See appendix 9.

1-6. Acronyms. See appendix 10.

1-7. Authority to Change this Order. The Aircraft Certification Service, Aircraft Engineering Division (AIR-100), and the Flight Standards Service, Aircraft Maintenance Division (AFS-300), can revise or cancel this order after coordinating with each other.

1-8. Records Management. For guidance on keeping or disposing of records, refer to FAA Orders 0000.1, *FAA Standard Subject Classification System*; 1350.14, *Records Management*; and 1350.15, *Records, Organization, Transfer, and Destruction Standards*. Or, see your office Records Management Officer or Directives Management Officer.

CHAPTER 2. REGULATORY REQUIREMENTS FOR ICA

2-1. Requirement for ICA.

a. Title 14 CFR § 21.50(b) requires design approval holders to furnish ICA per the applicable airworthiness regulations to the product owners. Design approval holders must furnish ICA on delivery of the affected aircraft or issuance of the aircraft's first standard airworthiness certificate, whichever occurs later. They must also make those instructions available to any other person required to comply with any of the terms of those instructions. The applicable airworthiness regulations also require that ICA be acceptable to the Administrator. That is the basis for our review and finding of acceptability. The design approval holder is responsible for ensuring there is enough information in the ICA to maintain the continued airworthiness of the product.

b. Title 14 CFR § 21.50(b) requires ICA for design approvals applied for after January 28, 1981. We do not use the original certification basis to determine if ICA are required. We use the date of the application for design approval. For example, in 1965 we required applicants for a type certificate (TC) with a certification basis of Civil Air Regulation 4b to develop maintenance instructions. However, we did not require them to furnish the instructions to product owners. Today, design approval holders of a supplemental type certificate (STC) or amended TC for this same product must furnish ICA for the areas changed on the product that meet the applicable airworthiness regulations per 14 CFR § 21.50(b). They must do this, even though the original certification basis did not require this.

c. We will not retroactively require design approval holders to develop, or change, ICA on any previous design approvals. However, we will require ICA for these approvals if we (which includes the ACO, ECO, and AEG) determine there isn't enough information to maintain the product's airworthiness, or issue new regulations requiring ICA (that is, SFAR 88). We find these ICA deficiencies during investigations of airworthiness concerns, assessments of potential unsafe conditions, or special certification reviews.

2-2. Purpose of ICA. ICA keep the product airworthy. They provide documentation of necessary methods, inspections, processes, and procedures.

2-3. Design Approvals Needing ICA. As stated in paragraph 2-1, we require design approval holders to furnish acceptable ICA to product owners per 14 CFR § 21.50(b). We also require that they make the ICA available to any other persons required to comply with the ICA. We classify *all* the following as design approvals:

- a. TCs
- b. Amended TCs
- c. Changes to type design approved under 14 CFR §§ 21.97 and 21.99
- d. STCs

e. Amended STCs

2-4. Parts Manufacturer Approval (PMA) May Change ICA. Although a PMA is a design and production approval, effect on the eligible product ICA must still be considered and furnished per Order 8110.42, *Parts Manufacturer Approval Procedures*.

2-5. ICA for TSO Authorization and Import TSOs (Letter of TSO Design Approval) only apply to applicants of technical standard order (TSO) authorizations if the TSO requires ICA or maintenance instructions. If so, as with all other design approvals, we must review the ICA and determine if it is acceptable. For example, see Appendix 4 of TSO-C77b, *Gas Turbine Auxiliary Power Units*. In it, applicants must provide ICA similar to that required in 14 CFR § 33.4, Appendix A.

2-6. Major Repairs May Change ICA. Because major repairs can change existing maintenance practices or inspection intervals, we require the developer of the repair to assess them for changes to the ICA or existing maintenance practices. For example, major structural repairs may need more inspection. Repairs on static engine components could even influence the life limits on critical rotating parts. The person holding the inspection authorization or authority to approve the return to service is responsible for determining if any changes are necessary to the existing product ICA resulting from the major repair. Then, the person must ensure the revised ICA are available to the owner or operator.

2-7. Major Alterations May Change ICA. Because major alterations are subject to the same airworthiness requirements as the product, we require the developer of the alteration to assess all major alterations for changes to the product-level ICA. Then, they must make the revised ICA available to the owner of the product. See Order 8300.10, *Airworthiness Inspectors Handbook*, for more information on the requirement for ICA on major alterations.

2-8. ICA in Manufacturer's Service Documents. We find that FAA-approved parts of publications by a TC holder (or appliance or component manufacturer) about safety, product improvement, economics, and operational and/or maintenance practices can result in changes to the type design. When they change the type design, the publications constitute a design approval, and are subject to the applicable airworthiness requirements and 14 CFR § 21.50(b). Consequently, we expect the TC holder/manufacturer to assess the change to type design and provide all necessary information to correctly maintain the product throughout its operational life.

a. Manufacturers/TC holders can use their service documents as the method of making changes to ICA available if:

- (1) The documents contain all required information for the change to type design; and
- (2) They furnish the documents to the FAA and all owners of the product per the program identified in section 5-1, paragraphs k and l of this document.

b. Typical publications include: service bulletins; all-operator's letters; service newsletters; and service digests or magazines. They do not include publications required for FAA type certification or approval, such as flight manuals and certain maintenance manuals.

See FAA Advisory Circular (AC) 20-114, *Manufacturer's Service Documents*, for more information.

2-9. ICA for Special Classes of Aircraft. Title 14 CFR § 21.17(b) covers special classes of aircraft, including the engines and propellers installed on them. This class of aircraft includes gliders, airships, and other non-conventional aircraft for which airworthiness standards do not exist. In these instances, the content of a “complete set” of ICA depends on which airworthiness standards the FAA determines appropriate. To determine content, the applicant must use appendixes from the applicable airworthiness regulations determined by the FAA.

2-10. ICA for Military Surplus Aircraft.

a. Title 14 CFR § 21.25a(2) covers aircraft manufactured to meet the requirements of, and accepted for use by, one of the U.S. armed services. These aircraft were later modified for a special purpose. Before we will issue a TC under this category, we require ICA for the aircraft, engines, and alterations for the special purposes. The baseline ICA or maintenance instructions for a surplus aircraft and its engines are those instructions approved and used by the U.S. military in the maintenance of the aircraft and components or a civil counterpart that is type certified. They should submit enough data to the FAA to show these ICA are technically valid for the aircraft's intended civil use. These data include:

(1) Identification of parts of the military technical publications that are NOT used for the restricted category special purpose, such as instructions on uniquely military equipment, weapons, armor, and military avionics. These parts are removed for civil certification.

(2) ICA for equipment that replaces the existing products and appliances, and installation of new products and appliances for the special purpose.

b. When seeking a TC under 14 CFR § 21.27(b) for military surplus aircraft with a previously type certificated civil counterpart, applicants must provide ICA if:

(1) The regulations required ICA when the aircraft was accepted for operational use by the armed forces, or

(2) The civil counterpart TC was applied for after January 28, 1981. The ICA should contain the information required by the applicable airworthiness standards for the aircraft type (14 CFR parts 23, 25, 27, or 29).

CHAPTER 3. ICA FORMAT AND TYPES OF DATA

3-1. What the ICA Should Include, Overall – Applies to all Design Approval Holders.

a. ICA for each aircraft must include:

(1) ICA for each engine, propeller, and appliance required by the applicable airworthiness regulations, and

(2) Any required information about the interface of those engines, propellers, and appliances with the aircraft.

b. If the ICA are not supplied by the manufacturer of an appliance, engine, or propeller installed in the aircraft, then the ICA for the aircraft must include the information essential to the aircraft's continued airworthiness.

3-2. How to Format the ICA.

a. If you are in an ACO, you should tell applicants to prepare ICA in English, as a manual or manuals, depending on how much data they provide. The manuals need to be easy to read and follow. Each chapter or section should give detailed instructions for completing a task. All manuals should have a method of recording updates to their content, such as a list of effective pages. You can refer applicants to sample formats in the Air Transport Association's iSpec 2200, *Information Standards for Aviation Maintenance*, latest edition, and General Aviation Manufacturers Association's Specification No. 2, *Maintenance Manual*, dated September 1, 1982.

b. If there are multiple manuals, there should be a principal manual that describes the other manuals and how to apply them. It should also have a table of contents of all other manuals. The principal manual is the one used for day-to-day maintenance of the aircraft, engine, or propeller. Overhaul manuals, component maintenance manuals (CMM), maintenance review board (MRB) reports, and service bulletins do not offer this information.

c. If previous ICA or maintenance documents do not exist, or were developed before January 28, 1981, the ICA submitted for a subsequent design change (after January 28, 1981) should follow the format requirements in the applicable airworthiness regulations. Regardless of the format, you should review any submittal of ICA containing the essential information for acceptability.

3-3. ICA Content for Specific Design Approvals.

a. The appendixes in the applicable airworthiness regulations specifically say what must be in the ICA. Chapter 4 of this order provides more detail on the information required per the applicable airworthiness regulations. Besides the information in paragraphs 3-3b through 3-3e, all ICA submitted to you:

(1) Must be specific to the product, not general. It's been our experience that applicants rely too much on "standard practices" or other general guidance as the only

installation and maintenance details. Often, type design data packages refer to AC 43-13-1B, *Acceptable Methods, Techniques, and Practices – Aircraft Inspection and Repair*, for installation and maintenance instructions. That guidance is general, in that it is acceptable only when there are no manufacturer repair or maintenance instructions. It allows an owner, operator, or installer to choose many options for installation or maintenance. Although some standard practice manuals are acceptable for use on a specific task, they are not acceptable as the “complete set” of ICA. We must have product-specific ICA to find that the configuration complies with criteria set by the certification basis. Applicants should substantiate any use of standard practices documents applicable to the configuration being certified.

(2) Must contain the Airworthiness Limitations Section (ALS) statement shown in the applicable airworthiness regulations even when the design approval does not affect the ALS. We require this to document that the ALS has been reviewed and the applicant addressed any changes or impacts.

(3) Must include applicants’ program showing how they plan to distribute changes to the ICA made by them or by the manufacturers of products and appliances installed.

b. *ICA for a TC* must have all information required by the appendix of the applicable airworthiness regulations, as shown in chapter 4 of this document. For example, for a new aircraft being type certificated to 14 CFR part 25, applicants’ ICA should include all items marked in this order as “(Aircraft).” An engine TC project should include all information marked “(Engine).” The maintenance manual is marked for both “(Aircraft) and (Engine),” because the regulations require maintenance manuals for both the aircraft and engine.

c. *ICA for an Amended TC* that designates a new model product must include all required information in the appendix of the applicable regulations, as shown in chapter 4 of this order. Applicants can use ICA from the baseline product where the processes and procedures are identical with the new model. Applicants must develop new ICA to cover differences between the earlier version and a new product.

d. *ICA for an STC or Amended STC* should cover only the items changed or affected by the design change for which application is made. This includes other systems, parts, or areas of the aircraft. For example, if an STC describes how to install a global positioning satellite (GPS) system, it will not affect – and doesn’t need to address – ICA for the engine.

(1) However, the submitted ICA must include all applicable items from the regulations for the installation. Also, the ICA must include any appropriate information about the GPS antenna and its installation. If the GPS is critical to operations, requirements for periodic performance checks must also be in the ICA. We consider ICA that cover only the affected design change as complete under 14 CFR § 21.50(b).

(2) If the design change does not affect or change the existing ICA or maintenance documentation, the applicant can submit an *impact assessment* of the need for ICA. This satisfies the “complete set” requirement. The assessment must show that the STC project does not change any information, procedures, process, requirements, or limitations in the current ICA or maintenance documentation. Therefore, the original design approval holder’s ICA still

applies. After completing the assessment, the applicant must submit either recommended changes or a statement that the existing ICA apply.

e. *ICA for All Other Changes to Products* must cover the systems, parts, or areas of the aircraft affected or changed by the design change for which application is made. Other product changes include changes to type design approved under 14 CFR §§ 21.97 and 21.99, PMAs, and major repairs or alterations. Managing ACOs/ECOs, AEGs, and FSDOs will help an applicant determine the final content requirements.

(1) If the design change does not affect or change the existing ICA or maintenance documentation, the applicant can submit an *impact assessment* of the need for ICA. This satisfies the “complete set” requirement. The assessment must show that the certification project did not change any information, procedures, process, requirements, or limitations in the current ICA or maintenance documentation.

(2) Therefore, the original design approval holder’s ICA still apply. After completing the assessment, the applicant must submit either recommended changes or a statement that the existing ICA apply.

f. To ensure completeness, appendixes 1-7 of this order are checklists for each specific product, and must be a basis for review. There may be design features or product mission considerations that need specific ICA that are not on the checklists. Therefore, do not view the checklists as all-inclusive. The engineer and AEG inspector should always use their best judgment when determining if the ICA are complete.

CHAPTER 4. REQUIRED MANUALS OR SECTIONS

4-1. Airworthiness Limitations Section (ALS).

a. For an aircraft, balloon, engine, or propeller, there must be a separate and distinguishable ICA section, called “Airworthiness Limitations.” The ALS must prominently display the statement as shown in the appendix of the applicable airworthiness regulations. The applicable airworthiness regulations require the applicant to include the following in the ALS:

- (1) Approved mandatory replacement times for type certification;
- (2) Approved mandatory inspection times for type certification; and
- (3) Inspection procedures for those approved mandatory times.

b. If the ICA consists of multiple manuals, require applicants to include the ALS in the “principal manual” and do not allow reference to any other documents. Work with the applicant to identify the principle manual. In general, the principle manual will be the document used for maintenance. However, it may also be the document used for scheduled maintenance to ensure all required inspections and associated limitations are contained within a single document. ICA complexity and the type of product will determine assignment of the principle manual.

c. We consider paragraphs 4-1(a)(1) through 4-1(a)(3) critical. The product’s airworthiness could be compromised if an aircraft, balloon, engine, or propeller does not comply with the inspection and replacement times and procedures in those paragraphs. Applicants typically identify these items when they perform safety assessments on the product’s structure and systems.

d. Examples of items required for type certification are structural inspections per 14 CFR § 25.571, § 27.571, and § 29.571, and fuel system requirements per § 25.981 (Transport Category Aircraft).

e. For regulatory requirements, see:

- ∞ Title 14 CFR § 23.1529, Appendix G, G23.4;
- ∞ § 25.1529, Appendix H, H25.4;
- ∞ § 27.1529, Appendix A, A27.4;
- ∞ § 29.1529, Appendix A, A29.4;
- ∞ § 31.82, Appendix A, A31.4;
- ∞ § 33.4, Appendix A, A33.4; and
- ∞ § 35.4, Appendix A, A35.4.

4-2. Certification Maintenance Requirements (CMR) (for Transport Category Airplane) are required inspections or maintenance tasks. They apply to equipment, systems, and power plant

installations. They are performed at certain times to detect or correct safety-significant latent failures (failures not known to the flight crew). CMRs are required by the type design and to maintain a product's airworthiness. CMRs are equal to a limitation and required as part of the ICA. See AC 25-19, *Certification Maintenance Requirements*, for more information.

4-3. Aircraft Maintenance.

a. These manuals or sections must explain aircraft/rotorcraft features, and give information to the extent necessary to conduct aircraft/rotorcraft maintenance or preventive maintenance, including:

(1) Description of all systems and installations, including engines, propellers, and appliances (for aircraft/rotorcraft) and accessories (for engines).

(2) Removal and installation instructions for parts, including any required equipment and precautions.

(3) Description of how the aircraft components, installed appliances, and systems operate and are controlled, including special procedures and limitations.

(4) Servicing information, including servicing points (location and access), capacities of tanks and reservoirs, types of fluid used, pressures applicable to the various systems, and any required equipment and precautions.

(5) Location of access panels for inspection and servicing.

(6) Location of lubrication points and lubricants to use, including any required equipment, and precautions.

(7) Aircraft towing instructions, including any required equipment, precautions, and limitations.

(8) Aircraft jacking, mooring, and leveling instructions, including any required equipment, precautions, and limitations.

(9) Lifting and shoring instructions, including required equipment and precautions.

(10) Weight and balance instructions to determine the center of gravity.

b. For regulatory requirements, see:

∞ Title 14 CFR § 23.1529, Appendix G, G23.3(a);

∞ § 25.1529, Appendix H, H25.3(a);

∞ § 27.1529, Appendix A, A27.3(a); and

∞ § 29.1529, Appendix A, A29.3(a).

4-4. Aircraft Maintenance Instructions.

a. These manuals and sections must include:

(1) Scheduling information for each part of the aircraft, its engines, auxiliary power units, propellers, accessories, instruments, and equipment. This information should give recommended times for cleaning, inspecting, testing, lubricating, and adjusting each part. It includes the degree of inspection required, the wear tolerances, and work recommended. Applicants can refer to an accessory, instrument, or equipment manufacturer as the source of this information. They can do this only if they show that the item has an exceptionally high degree of complexity requiring specialized maintenance techniques, test equipment, or expertise. Applicants must provide information on these techniques, test equipment, or expertise to the FAA for review.

(2) The recommended overhaul periods that show when to overhaul the product, accessories, instruments, or equipment. Information on overhaul periods should include the necessary cross-reference to the ALS if the overhaul time is a limitation identified in paragraph 4-1 of this order. If the ICA gives an overhaul time, then the ICA must include overhaul information or refer to an overhaul manual. The applicant must provide the information or manual to the FAA for review.

(3) An inspection program consisting of the thresholds for inspection, inspection intervals, type of inspection required, and the extent of inspections necessary to ensure the continued airworthiness.

(4) Troubleshooting information describing probable malfunctions, and how to recognize and correct them.

(5) Information describing the order and method of removing and replacing products and parts with any necessary precautions to be taken.

(6) Description of how to adjust and test the system, including flight control systems functional checkout procedures after maintenance, and any required equipment and precautions.

(7) Diagram of structural access plates, and how to gain access when access plates are not provided.

(8) Details for applying special inspection techniques, including procedures where these techniques are specified.

(9) Identification of primary structure and recommended inspection times, locations, and types such as ultrasonic, eddy current, and so on.

(10) All data on structural fasteners, such as identification, discard recommendations, and torque values.

(11) List of special tools needed to accomplish recommended maintenance.

b. The applicant can choose to conduct a maintenance review board (MRB). The MRB report (MRBR) can be picked up by the design approval holder and included as part of the ICA. Inclusion of the MRB report in the ICA is only required when one was developed and subsequently requested by the owner or operator. The MRB report is intended for air carriers. This report contains the initial minimum scheduled maintenance and inspection requirements for a particular transport category aircraft and on-wing engine program. Air carriers can use the MRB report, and its associated requirements, to develop maintenance programs. See AC 121-22A, *Maintenance Review Board Procedures*, for additional information.

c. For regulatory requirements, see:

- ∞ Title 14 CFR § 23.1529, Appendix G, G23.3(b);
- ∞ § 25.1529, Appendix H, H25.3(b);
- ∞ § 27.1529, Appendix A, A27.3(b);
- ∞ § 29.1529, Appendix A, A29.3(b); and
- ∞ § 31.82, Appendix A, A31.3.

4-5. Balloon Maintenance.

a. These manuals or sections must explain the balloon's features and provide information to the extent necessary to conduct maintenance or preventive maintenance. They include:

(1) Description of the balloon, its systems, and installations. This description should include, but is not limited to, the controls, basket structure, fuel systems, and heating assembly.

(2) Description of how the system operates and is controlled, including special procedures and limitations.

(3) Servicing information that covers balloon components, including burner nozzles, fuel tanks, valves during operation, and any required equipment and precautions.

(4) Maintenance information for each part of the balloon and its envelope, controls, basket structure, fuel systems, instruments, and heater assembly that provides recommended times for cleaning, inspecting, testing, lubricating, and adjusting the balloon and its components. It includes the degree of inspection required, the wear tolerances, and work recommended. Applicants may refer to an accessory, instrument, or equipment manufacturer as the source of this information if they show that the item has an exceptionally high degree of complexity requiring specialized maintenance techniques, test equipment, or expertise.

(5) The recommended overhaul periods that show when to overhaul the product, accessories, instruments, or equipment. Information on overhaul periods should include the necessary cross-reference to the ALS if the overhaul time is a limitation identified in paragraph 4-1 of this order. If the ICA gives an overhaul time, then the ICA must include the overhaul information or refer to an overhaul manual. The applicant must provide the information or manual to the FAA for review.

(6) An inspection program consisting of the thresholds for inspection, inspection intervals, type of inspection required, and the extent of inspections necessary to ensure the continued airworthiness.

(7) Troubleshooting information describing probable malfunctions, and how to recognize and correct them.

(8) Hard landing inspection items and procedures.

(9) Balloon storage preparation and limits.

(10) Description of how to repair the balloon envelope, its basket, or trapeze.

(11) Description of how to inflate and deflate the balloon envelope.

b. See 14 CFR § 31.82, Appendix A, A31.3 for the regulatory requirement.

4-6. Engine Maintenance.

a. These manuals or sections must explain engine features, and provide information to the extent necessary to conduct engine maintenance or preventive maintenance. They include:

(1) Detailed description of the engine and its components, systems, and installations.

(2) Installation instructions, including proper procedures for uncrating, deinhibiting, acceptance checking, lifting, and attaching accessories. These instructions should include any necessary checks, warnings, cautions, and notes that are part of the engine type design.

(3) Description of how the engine components, systems, and installations operate. Applicants should also describe how to start, run, test, and stop the engine and its parts. These descriptions must include any special procedures and limitations.

(4) Servicing information, including servicing points (location and access), capacities of tanks and reservoirs, types of fluid used, and pressures applicable to the various systems. It includes any required equipment and precautions.

(5) Scheduling information for each part of the engine that provides recommended times for cleaning, inspecting, testing, lubricating, and adjusting the engine. It includes the degree of inspection required, the wear tolerances, and work recommended. Applicants can refer to an accessory, instrument, or equipment manufacturer as the source of this information. They can do this only if they show that the item has an exceptionally high degree of complexity requiring specialized maintenance techniques, test equipment, or expertise.

(6) The recommended overhaul periods that show when to overhaul the product, accessories, instruments, or equipment. Information on overhaul periods should include the necessary cross-reference to the ALS if the overhaul time is a limitation identified in paragraph 4-1 of this order.

(7) An inspection program consisting of the thresholds for inspection, inspection intervals, type of inspection required, and the extent of inspections necessary to ensure the continued airworthiness.

(8) Troubleshooting information describing probable malfunctions, how to recognize and correct them, and precautions.

(9) Information describing the order and method of removing and installing the engine and its parts and accessories. These instructions must include any warnings, cautions, and notes that are part of the engine type design.

(10) List of tools and equipment necessary for maintenance and directions as to their method of use.

b. See 14 CFR § 33.4, Appendix A, A33.3(a) for the regulatory requirement.

4-7. Engine Overhaul.

a. This manual or section offers the owner information on inspecting, repairing, or replacement information necessary to restore the airworthiness of the product. It covers engine disassembly, overhaul, reassembly, and necessary cautions or warnings. The manual or section also gives:

(1) Cleaning and inspection instructions that cover the materials and apparatus to use and methods and precautions to take during overhaul. It must include methods of overhaul inspection.

(2) Details on all fits and clearances of the engine and components, and structural integrity and functionality for new and worn parts.

(3) Details of repair methods for worn or otherwise substandard parts and components along with information necessary to determine when replacement is necessary.

(4) Instructions for testing an engine after overhaul, including test acceptance criteria.

(5) Instructions for storing engines. These instructions identify special containers and required equipment or tools. The ICA should also include environmental restrictions for storage and storage limits.

(6) List of tools and equipment necessary for overhaul and directions as to their method of use.

b. See 14 CFR § 33.4, Appendix A, A33.3(b) for the regulatory requirement.

4-8. Propeller Maintenance.

a. These manuals or sections must explain propeller features, and provide information to the extent necessary to conduct propeller maintenance or preventive maintenance. They include:

- (1) Detailed description of the propeller and its systems and installations.
- (2) Description of how the propeller components, systems, and installations are controlled and operated, including any special procedures and limitations.
- (3) Installation instructions, including proper procedures for uncrating, acceptance checking, and lifting. They should also include any necessary checks, warnings, cautions, and notes that are part of the propeller type design.
- (4) Scheduling information for each part of the propellers that provides recommended times for cleaning, inspecting, testing, lubricating, and adjusting the propellers. It includes the degree of inspection required, the wear tolerances, and work recommended. Applicants can refer to an accessory, instrument, or equipment manufacturer as the source of this information. They can do this only if they show that the item has an exceptionally high degree of complexity requiring specialized maintenance techniques, test equipment, or expertise.
- (5) The recommended overhaul periods that show when to overhaul the product, accessories, instruments, or equipment. Information on overhaul periods should include the necessary cross-reference to the ALS if the overhaul time is a limitation identified in paragraph 4-1 of this order.
- (6) An inspection program consisting of the thresholds for inspection, inspection intervals, type of inspection required, and the extent of inspections necessary to ensure the continued airworthiness.
- (7) Troubleshooting information describing probable malfunctions, how to recognize and correct them, and precautions.
- (8) Information describing the order and method of removing and installing the propeller and its parts and accessories. It includes warnings, cautions, and notes that are part of the propeller type design.
- (9) List of tools and equipment necessary for maintenance, and directions as to their method of use.

b. See 14 CFR § 35.4, Appendix A, A35.3(a) for the regulatory requirement.

4-9. Propeller Overhaul.

a. The manual or section covers propeller disassembly, overhaul, and reassembly. It must include any necessary cautions or warnings. The manual or section also must include:

- (1) Cleaning and inspection instructions that cover the materials and apparatus to use, and methods and precautions to take, during overhaul. These instructions must also include methods of overhaul inspection.
- (2) Details on all fits and clearances for the propeller and components relative to overhaul.

(3) Details of repair methods for worn or otherwise substandard parts and components along with information necessary to determine when replacement is necessary.

(4) Description of how to test the propeller after overhaul, including test acceptance criteria.

(5) Instructions for storing propellers. These instructions identify special containers and required equipment or tools. The ICA should also include the environmental restrictions for storage and storage limits.

(6) List of tools and equipment necessary for overhaul and directions as to their method of use.

b. See 14 CFR § 35.4, Appendix A, A35.3(b) for the regulatory requirement.

4-10. System Wiring Diagrams. For aircraft, engines, and propellers, these diagrams cover the aircraft's electrical or electronic circuits. They must include wire routing information detailed enough to enable maintenance personnel to troubleshoot, repair, and service the electrical system. These diagrams must also include a method of determining connector type, wire type, and wire size. We consider the system wiring diagrams as descriptive data of the systems used on the product, and part of the ICA.

4-11. Component Maintenance Manual or Section. If the aircraft, engine, or propeller maintenance information references the use of a component maintenance manual as the appropriate location for the ICA, those applicable instructions are incorporated by reference and become part of the complete set of ICA. As part of the ICA, they must be made available to the owner and any other person required to comply with those instructions per 14 CFR § 21.50. They also must contain the following information:

a. Manuals or sections explaining the article's features, and provide information to the extent necessary on how to conduct maintenance or preventive maintenance.

b. A description of the control and operation of the article's components and systems. The description should provide enough detail to perform the maintenance at the levels specified.

c. Complete installation instructions for those parts and accessories that are part of the approved design. The instructions should include minimum interface instructions and any appropriate specifications, warnings, or cautions for those areas on which articles that are not part of the approved design could later be installed on the type-certificated product.

d. Recommended times for cleaning, inspecting, testing, lubricating, and adjusting the article and its components and systems. This scheduling information must include the depth of inspection required, the wear tolerances, and tasks performed. It should ensure the continued airworthiness of the article. Although the applicant does not have to provide specific scheduling information for each part, the lack of such information on any part should not adversely affect continued airworthiness of the article.

- e. An inspection program to ensure the continued airworthiness of the article. Certification tests, analyses, and service experience, if available, are useful when developing the inspection program for parts, assemblies, sub-assemblies, or modules.
- f. Troubleshooting information to address potential malfunctions and provide procedures to correct them or replace the affected part or component before continued operation.
- g. A means to ensure configuration control during maintenance. This ensures that the proper parts, components, and combinations of parts and components are identified and conform to the approved design.
- h. Location of access panels for inspection and servicing. Diagram of structural access plates, and how to gain access when access plates are not provided.
- i. Instructions for storing parts and components and identifying special containers and any equipment or tools. The ICA should also include environmental restrictions for storage and storage limits.
- j. List of tools and equipment necessary for maintenance and directions as to their method of use.

4-12. Component Overhaul Manual or Section. If the aircraft, engine, or propeller maintenance information references the use of a component overhaul manual as the appropriate location for the ICA, those applicable instructions are incorporated by reference and become part of the complete set of ICA. As part of the ICA, it must be made available to the owner and any other person required to comply with those instructions per 14 CFR § 21.50. This manual or section must contain the following information:

- a. Cleaning and inspection instructions that cover the materials and apparatus to use and methods and precautions to take during overhaul. These instructions must include methods of overhaul inspection.
- b. Details on all fits and clearances for the component relative to overhaul.
- c. Details of repair methods for worn or otherwise substandard parts with information necessary to determine when to replace parts.
- d. Instructions for testing the article after overhaul. This should include test acceptance criteria.
- e. Instructions for storage that identify special containers and required equipment or tools. The ICA should also include the environmental restrictions for storage and storage limits.
- f. List of tools and equipment necessary for maintenance and directions as to their method of use.

4-13. Non-Destructive Test (NDT) and Inspection. For aircraft, balloons, engines, and propellers, this manual or section covers testing techniques, instructions, and required equipment

for all required NDTs and inspections identified in the maintenance and inspection programs. Applicants can write the manual or section specifically for the product, or they can refer to a standard practices/procedures document.

CHAPTER 5. ACO AND AEG RESPONSIBILITIES

5-1. What ACOs, ECOs, and Directorate Offices Responsible for Validation of Certain TCs Must Do. If you are in an ACO/ECO, or directorate office responsible for type validation (from now on referred to as the “ACO”), you are the primary connection with the applicant for design approvals. You are also responsible for approving the ALS of the ICA (and the CMRs if applicable). You must determine if the remainder of the ICA is acceptable with concurrence from the AEG on maintenance requirements. Also, you must advise all applicants that they have to develop ICA for every design approval application. After you receive an application, you:

a. Cannot delegate the finding of acceptance to a DER, unless a designated alteration station (DAS) or delegated option authorization (DOA) is administering the project and the DAS or DOA interfaces with the AEG. Although ICA are not specifically required for SFAR 36 authorizations, it is beneficial for them to identify any changes to existing ICA and coordinate with the AEG. See Order 8100.9, *DAS/DOA/SFAR 36 Authorization Procedures*, for more information.

b. Coordinate with the responsible AEG individual at the start of each program to give them information, and notify them that you need their concurrence of the ICA. We recommend using a certification project notification to notify them.

c. Notify applicants early in the program that you require ICA per 14 CFR §§ 23.1529, 25.1529, 27.1529, 29.1529, 31.82, 33.4, or 35.4 (whichever applies) and their associated appendixes. In this notification, state that the review can take up to 30 calendar days after they submit the ICA for completion. See chapter 3 for more information on content requirements. For a TSO, ensure that the applicant addressed all ICA requirements that apply.

d. Give the applicant the names and offices of the AEG airworthiness inspectors who will review the ICA.

e. Invite the AEG airworthiness inspector to the TC board, or other formal meetings with the applicant. This ensures that everyone understands the requirement for ICA and what should be in it.

f. Communicate regularly with the applicant and AEG airworthiness inspector to ensure that the ICA meets the project schedule. Reviewing the ICA can be time-consuming. You, the AEG, and the applicant need to communicate regularly to keep the project on schedule.

g. Review and approve the ALS, CMRs if applicable, and the instructions for installing and operating the engine, propeller, or both. Before issuing the design approval, you must approve the ALS (and CMRs if applicable). Contact the AEG and ask for their help with reviewing and finding acceptability of the following before you approve them:

- (1) Instructions for engine and propeller installations (14 CFR §§ 33.5 & 35.3), and
- (2) Format and content of the ALS (and CMRs if applicable).

h. For TC and amended TC projects requiring a new standard certificate of airworthiness, approve a program to ensure the applicant provides a complete set of accepted ICA to the owner before delivery of the first aircraft or issuance of the standard airworthiness certificate, whichever occurs later.

i. Should not normally issue design approvals before you and the AEG have concurred, where applicable, with the proposed ICAs or the assessment showing there is no ICA. If there is a need to issue a design approval without complete ICA coverage, you must approve a plan that ensures all ICA requirements will be complete and accepted before the first affected aircraft is operated with a standard airworthiness certificate. The plan must at least have:

- (1) A list of all parts of the ICA affected by the design change.
- (2) A detailed schedule for completing and submitting the ICA to the ACO.

(3) A statement saying, "Instructions for Continued Airworthiness are incomplete. The aircraft will be eligible for return to service when the ICA are complete and accepted." You must put this statement in the type certificate data sheet (TCDS) or the "Limitations" section of the STC, as applicable. This means an aircraft can be modified, but cannot return to service until we accept the complete ICA. When we accept the ICA, you can remove the statement.

(4) A memo to notify the appropriate individual or office (FAA or designee) that a standard airworthiness certificate cannot be issued. When we accept the ICA, rescind the memo. In the case of a TC issue, once a plan for completing the ICA is approved, the cognizant ACO should inform the affected MIDO of the delay in ICA. As a courtesy, the ACO should also inform the applicant of the delay. After accepting the ICA, inform the MIDO and applicant that a standard airworthiness certificate can be issued. If it's an STC, then the cognizant FSDO should be informed of the delay and approval of return to service delayed until completion of the ICA.

j. Place a statement on the design approval (that is, design approval letter, FAA-approved top drawing, or type certificate data sheet) when the applicant submits an impact assessment showing there are no changes to the existing ICA or maintenance instructions. It shows that supplemental ICA are not required. For an STC, we recommend placing this statement as a "Note" below the "Limitations and Conditions" section. This will show that the FAA reviewed the impact assessment and found that no additional changes to the existing ICA are required.

k. Review and determine (with AEG concurrence) the acceptability of the applicant's program showing how the applicant, or the design approval holder, is going to distribute the initial ICA and subsequent changes. This program should include the kind of media the applicant will use to distribute the ICA and how soon after a change the applicant will send it.

l. Review and determine (with AEG concurrence) the acceptability of the applicant's program for submitting changes, not associated with a new design approval, to the ICA for review. These changes include manual revisions driven by service bulletins or errors found during operation of the product. The program should allow the applicant to send changes to the owners while sending changes to the FAA for review. This ensures accurate ICA are

immediately available to those operating the product. If you and the AEG find errors in the submitted changes, contact the applicant and suspend use of the published changes until the applicant can make the proper corrections.

For engines and propellers, changes to ICA made by service documents (service bulletins and service letters) must be incorporated into the ICA by reference as described in AC's 33.4-1, *Instructions for Continued Airworthiness*, and 33.5-1, *Propeller Instructions for Continued Airworthiness*, respectively."

5-2. What the AEG Must Do. If you are in an AEG, you are Flight Standards operations, maintenance, and avionics inspectors lending your specialized technical services to assigned aircraft, engines, propellers, or TSO products at the respective ACO. This includes reviewing, resolving deficiencies and concurring on the acceptance of the maintenance requirements of the ICA. It also includes helping to review the remainder of the ICA and subsequent changes.

If you are an AEG Inspector and have been assigned an ICA review project, you need to do the following:

a. Give the requesting ACO project manager the names of the AEG airworthiness inspectors assigned to the project.

b. Ensure that the project AEG airworthiness inspectors meet or communicate with the ACO project engineers to coordinate the maintenance requirements for each discipline, particularly those for maintaining the product's continued airworthiness.

c. Report the ICA status to the ACO project manager during any internal FAA meetings and whenever you think necessary.

d. If you are the AEG airworthiness inspector, meet or communicate with the applicant as often as necessary to monitor the progress of ICA publications. You must advise the applicant, when needed, on proper compliance to the operations and maintenance requirements in the airworthiness regulations and their associated appendixes. Ensure that the ACO project manager is aware of these communications and any disputed issues and associated corrective action.

e. Send the ACO project manager written concurrence of acceptance, within 30 calendar days of receiving the ICA. Written concurrence means a memo, electronic mail, or an ICA acceptance coordination process developed between the ACO and AEG. If you cannot meet this timeline, you should coordinate a schedule with the ACO. The schedule shows the earliest possible time you can complete your review.

f. Review and determine (with the ACO project manager) the acceptability of the applicant's program showing how the applicant, or the design approval holder, is going to distribute ICA changes. It should include the kind of media the applicant will use to distribute changes, and how soon after the change the applicant will send it.

g. Review and determine (with the ACO project manager) the acceptability of the applicant's program for submitting changes to the ICA for review. The program should allow

the applicant to provide changes to the owners when sending changes to the FAA for review. This ensures accurate ICA are immediately available to those operating the product.

If you are the AEG airworthiness inspector, meet or communicate with the applicant as often as necessary to monitor the progress of ICA publications. You must advise the applicant, when needed, on proper compliance to the operations and maintenance requirements in the airworthiness regulations and their associated appendixes. Ensure that the ACO project manager is aware of these communications and any disputes.

5-3. The Flight Standards District Office (FSDO)/Certificate Management Office/Certificate Management Unit Inspector's Role.

a. If you are the inspector, you are the focal point for reviewing and accepting ICA on field approval projects. You must tell applicants that they have to submit ICA when asking for project approval. The ICA must meet the requirements of the applicable airworthiness regulations (see Order 8300.10, *Airworthiness Inspectors Handbook*). Anticipate that individuals with varying degrees of skill will use the ICA, so ICA need to be easy to understand.

b. Note that ICA are not only used by air carriers operating under part 121, but by operators under part 91. ICA are also the only source of information for maintaining certified products at repair stations when the stations are not performing maintenance for air carriers under 14 CFR § 145.2. You can accept the proposed ICA if the ICA do not add or change existing requirements in the ALS or CMR. However, if the change affects the ALS or CMR documents, you must contact the certifying ACO for approval.

5-4. How We Resolve Issues. Because engineering personnel and AEG airworthiness inspectors may disagree, we developed an issue-resolution process. These are the steps:

a. AEG and ACO/ECO project members review ICA and discuss their concerns and problems with the ICA. If the AEG and ACO/ECO project engineers agree, they give the problems and concerns with the ICA to the applicant for correction.

b. If AEG and ACO/ECO project members disagree on any item, individuals will give their concerns to their office managers. Remember that we consider AEGs the maintenance and operations experts, while ACOs and ECOs are design experts.

(1) If AEG and ACO/ECO managers can't resolve the disagreement, the concerned office sends a memo to the other office, explaining its concern, position, and proposed solution.

(2) The office getting the memo responds in writing. The office also sends a copy of its response to the responsible directorate's standards staff and – based on the subject – to Flight Standards' Aircraft Maintenance Division (AFS-300), Air Transportation Division (AFS-200), or General Aviation and Commercial Division (AFS-800). If appropriate, the office sends a copy to the regional counsel for review, comments, and resolution.

(3) The directorate's standards staff and the appropriate flight standards office will coordinate a position based on the recommendations. They will tell the ACO/ECO and AEG of their decision.

CHAPTER 6. DISTRIBUTING ICA AND CHANGES

6-1. ACOs/ECOs Review the Plan. In this chapter, we show you how to work with applicants on an acceptable way to distribute new and subsequent changes to ICA. We'll also cover when non-owners or operators (like 14 CFR part 145 repair stations) must have ICA "made available" to them. As we covered in paragraph 5-1 of this order, if you're in an ACO/ECO, you must review and accept the method of distributing ICA.

6-2. Distributing ICA.

a. The reason for furnishing ICA to the owner upon delivery of the aircraft or issuance of the airworthiness certificate is to ensure that the owner has ICA when operations begin. Most of the time, design approval holders will provide the ICA when they deliver the aircraft to the owner. However, there are cases when the owner has possession of the aircraft, but does not have an airworthiness certificate because of changes in the type design. In these cases, we would not require the ICA for the changes in type design until we issue the airworthiness certificate.

b. We require the design approval holder to furnish a complete set of ICA to the owner of each type aircraft, aircraft engine, or propeller. They can furnish it in hard copy (paper), by electronic means, or through web-based access. Regardless of the method, the owner can request a paper copy, which the design approval holder must furnish. We require this to ensure that owners have a copy of ICA they can use regardless of technology.

6-3. Changes to ICA. Title 14 CFR § 21.50(b) requires that the design approval holder make changes to the ICA available to any person who must comply with them. The approval holder provides changes following a program they wrote and the ACO/ECO and responsible AEG accepted. Or, they can follow previously established procedures acceptable to the FAA. Design approval holders should format the changes to supplement the original ICA. To prevent confusion, they should clearly say what's being changed. Instruct approval holders they can distribute changes to ICA using:

- a.** Paper copies of the changes, sent to all owners on record.
- b.** Electronic format copies, sent to all owners on record.
- c.** Web-based access to ICA changes. This option also requires a way of notifying owners on record that a change is available.

6-4. Design Approval Holders Must Make ICA Available.

a. Per 14 CFR § 21.50(b), design approval holders must furnish the owner of a type-certificated product at least one set of complete ICA. The rule also says the design approval holder must make those instructions available to any person required to comply with the terms of the instructions. We find that the owner or operator is required to maintain the airworthiness of the product. Therefore, if the person requesting the ICA is not the product owner or operator, they must meet these four conditions before we will require the design approval holder to make the ICA available to them:

(1) Application for the latest related TC (original, amended, or supplemental) was made after January 28, 1981.

(2) The latest related certification basis includes 14 CFR § 21.50 as amended September 11, 1980 or later (and §§ 23.1529, 25.1529, 27.1529, 29.1529, 31.82, 33.4 and 35.4 as applicable). That is, the certificate holder was required to develop and furnish ICA as part of the certification process.

(3) The requester (repair station) of the ICA is *currently* rated for the product/part, has the product/part listed in their limitations, and is required by Chapter 1 of 14 CFR to comply with ICA for the product/part.

(4) The requester (individual) of the ICA is performing work for the product owner under their 14 CFR part 65 certificate.

b. If the requested ICA data are a CMM or specific repair information, the design approval holder must refer to the CMM or repair information in higher-level ICA (airplane, engine, or propeller ICA) as the source of information for continued airworthiness actions.

c. Meeting each condition in paragraphs 6-4a(1) through 6-4a(4) is necessary to ensure enforcement of the 14 CFR § 21.50(b) rule. Conditions (1) and (2) are self-evident about whether the rule applies. Condition (3) is the only case in which a repair station or individual is *required* to perform maintenance per ICA. Condition (4) covers how to vouch for the validity of some CMMs as part of ICA. If top-level ICA contain “remove and replace” instructions for certain components, and don’t refer to CMMs or specific repair procedures for necessary airworthiness actions, then the:

- Aircraft can maintain its airworthiness by replacement action, and
- CMM or repair documentation is not part of the ICA.

d. If a person can show they meet the “make available” criteria in paragraphs 6-4a(1) through 6-4a(4), then by regulation they are also authorized to receive changes to that ICA. Work on a 14 CFR part 121 or 135 operator’s products must be performed per the operator’s processes and procedures (operator’s specification approved by the FAA). The processes and procedures may not include the design holder’s ICA.

e. We at the FAA do not regulate competition between repair stations, but rather safety. Our intent for 14 CFR § 21.50(b) was to facilitate owners/operators’ ability to manage their own maintenance, and to ensure that those *required* to accomplish continued airworthiness actions would have access to continued airworthiness instructions, in the interests of safety. We did not intend to ensure that any person wishing to enter the repair/overhaul business is provided with repair manuals.

APPENDIX 1. SMALL AIRCRAFT ICA CHECKLIST

REQUIREMENT	Regulation Appendix	Location In ICA
() ICA for each engine.	G23.1(b)	
() ICA for each propeller.	G23.1(b)	
() ICA for each appliance required by this chapter.	G23.1(b)	
() Required information on the interface of () appliances, () engines, and () propellers with the aircraft.	G23.1(b)	
() If ICA are not supplied by the manufacturer of an () appliance, () engine, or () propeller installed on the aircraft, the ICA for the aircraft must include () the information essential to the continued airworthiness of the aircraft.	G23.1(b)	
() Applicant's program showing how they or the manufacturers of products and appliances installed on the airplane will distribute changes to the ICA.	G23.1(c)	
() ICA in a manual or manuals. () Manuals arranged for easy and practical use.	G23.2(a)	
() Manuals prepared in English.	G23.3	
() Manuals must include introductory information explaining airplane's features and data necessary for maintenance or preventive maintenance.	G23.3(a)(1)	
() Description of the () aircraft and its systems and installations, () engines and its systems and installations, () propellers and its systems and installations, and () appliances and its systems and installations.	G23.3(a)(2)	
() Basic control and operating information describing () how the aircraft components and systems are controlled and () how the aircraft components and systems are operated, including () any special procedure and limitations.	G23.3(a)(3)	
() Servicing information covering () servicing points, () capacities of tanks, () capacities of reservoirs, () types of fluids used, and () pressures applicable to the various systems.	G23.3(a)(4)	
() Location of access panels for () inspection and () servicing.	G23.3(a)(4)	
() Servicing information covering () locations of lube points and () lube used.	G23.3(a)(4)	

APPENDIX 1. SMALL AIRCRAFT ICA CHECKLIST (CONTINUED)

REQUIREMENT	Regulation Appendix	Location In ICA
() Equipment required for servicing.	G23.3(a)(4)	
() Tow instructions and limitations.	G23.3(a)(4)	
() Mooring information	G23.3(a)(4)	
() Jacking information	G233(a)(4)	
() Leveling information	G33(a)(4)	
() Scheduling information for each part of the () aircraft, including recommended periods for () cleaning, () inspecting, () adjusting, () testing, and () lubricating; and () the work recommended at these periods.	G25.3(b)(1)	
() Scheduling information for () aircraft engines, including recommended periods for () cleaning, () inspecting, () adjusting, () testing, and () lubricating; and () the work recommended at these periods. NOTE: This information may be in the FAA accepted engine ICA.	G23.3(b)(1)	
() Scheduling information for () the aircraft's auxiliary power unit, including recommended periods for () cleaning, () inspecting, () adjusting, () testing, and () lubricating; and () the work recommended at these periods.	G23.3(b)(1)	
() Scheduling information for () aircraft propellers, including recommended periods for () cleaning, () inspecting, () adjusting, () testing, and () lubricating; and () the work recommended at these periods.	G23.3(b)(1)	
() Scheduling information for () aircraft accessories, including recommended periods for () cleaning, () inspecting, () adjusting, () testing, and () lubricating; and () the work recommended at these periods.	G23.3(b)(1)	
() Scheduling information for () aircraft instruments, including recommended periods for () cleaning, () inspecting, () adjusting, () testing, and () lubricating; and () the work recommended at these periods.	G23.3(b)(1)	

APPENDIX 1. SMALL AIRCRAFT ICA CHECKLIST (CONTINUED)

REQUIREMENT	Regulation Appendix	Location In ICA
() Scheduling information for () aircraft equipment, including recommended periods for () cleaning, () inspecting, () adjusting, () testing, and () lubricating; and () the work recommended at these periods.	G23.3(b)(1)	
() Degree of inspection for each part of the () aircraft and its () engines, () the auxiliary power unit, () propellers, () accessories, () instruments, and () equipment.	G23.3(b)(1)	
() Applicable wear tolerances.	G23.3(b)(1)	
Applicant may refer to an () accessory, () instrument, or () equipment manufacturer as the source of this information if applicant shows () that the item is exceptionally complex and requires specialized maintenance techniques, test equipment, or expertise.	G23.3(b)(1)	
() Recommended overhaul periods and necessary cross-references to the ALS.	G23.3(b)(1)	
() An inspection program that includes () the frequency and () extent of the inspection necessary to provide for continued airworthiness .	G23.3(b)(1)	
() Troubleshooting information describing () probable malfunctions, () how to recognize those malfunctions, and () remedies for them.	G23.3(b)(2)	
() Description of the order and method of () removing and () replacing products (engines and propellers) with any precautions.	G23.3(b)(3)	
() Description of the order and method of () removing and () replacing parts, with any precautions.	G23.3(b)(3)	
() Other instructions, including () storage limitations and procedures for () testing system during ground running, () making symmetry checks, () weighing and determining the center of gravity, () lifting, and () shoring.	G23.3(b)(4)	
() Diagrams of structural access plates and information needed to gain access for inspections when access plates are not provided.	G23.3(c)	
() Details for applying special inspection techniques, including radiographic and ultrasonic testing, where such processes are specified.	G23.3(d)	

APPENDIX 1. SMALL AIRCRAFT ICA CHECKLIST (CONTINUED)

REQUIREMENT	Regulation Appendix	Location In ICA
() Information needed to apply protective treatment to structure after inspection.	G23.3(e)	
() All data on structural fasteners, such as () identification, () discard recommendations, and () torque values.	G23.3(f)	
() List of special tools needed.	G23.3(g)	
() For commuter category aircraft: electrical loads applicable to the various systems.	G23.3(h)(1)	
() For commuter category aircraft: methods of balancing control surfaces.	G23.3(h)(2)	
() For commuter category aircraft: identification of primary and secondary structures.	G23.3(h)(3)	
() For commuter category aircraft: any special repair methods applicable.	G23.3(h)(4)	
() ICA must contain a section, titled Airworthiness Limitations, that is () segregated and () clearly distinguishable from the rest of the document. NOTE: The appropriate ACO/ECO office will evaluate and approve the Airworthiness Limitations Section (ALS) in the applicant's ICA.	G23.4	
() ALS must describe each () mandatory replacement time, () structural inspection interval, and () related structural inspection procedure, including () envelope structural integrity, required for type certification.	G23.4	
() If ICA consist of multiple manuals, the ALS required by this paragraph must be in the principal manual.	G23.4	
() ALS must contain a legible statement in a prominent location that reads : "The Airworthiness Limitations Section is FAA approved and specifies maintenance required under 14 CFR §§ 43.16 and 91.403 unless an alternative program has been FAA approved."	G23.4	

APPENDIX 2. TRANSPORT CATEGORY AIRCRAFT ICA CHECKLIST

REQUIREMENT	Regulation Appendix	Location In ICA
() ICA for each engine.	H25.1(b)	
() ICA for each propeller.	H25.1(b)	
() ICA for each appliance required by this chapter.	H25.1(b)	
() Required information on the interface of () appliances, () engines, and () propellers with the aircraft.	H25.1(b)	
() If ICA are not supplied by the manufacturer of an () appliance, () engine, or () propeller installed on the aircraft, the ICA for the aircraft must include () the information essential to the continued airworthiness of the aircraft.	H25.1(b)	
() Applicant's program showing how they or the manufacturers of products and appliances installed on the airplane will distribute changes to the ICA.	H25.1(c)	
() ICA in a manual or manuals. () Manuals arranged for easy and practical use.	H25.2(a) H25.2(b)	
() Manuals prepared in English.	H25.3	
() Manuals must include introductory information explaining the airplane's features and data necessary for maintenance or preventive maintenance.	H25.3(a)(1)	
() Description of the () aircraft and its systems and installations, () engines and its systems and installations, () propellers and its systems and installations, and () appliances and its systems and installations.	H25.3(a)(2)	
() Basic control and operating information describing () how the aircraft components and systems are controlled and () how the aircraft components and systems are operated, including () any special procedure and limitations.	H25.3(a)(3)	
() Servicing information covering () servicing points, () capacities of tanks, () capacities of reservoirs, () types of fluids to be used, and () pressures applicable to the various systems.	H25.3(a)(4)	
() Location of access panels for () inspection and () servicing.	H25.3(a)(4)	
() Servicing information covering () locations of lube points, () lube used.	H25.3(a)(4)	

**APPENDIX 2. TRANSPORT CATEGORY AIRCRAFT ICA CHECKLIST
(CONTINUED)**

REQUIREMENT	Regulation Appendix	Location In ICA
() Equipment required for servicing.	H25.3(a)(4)	
() Tow instructions and limitations.	H25.3(a)(4)	
() Mooring information.	H25.3(a)(4)	
() Jacking information.	H25.3(a)(4)	
() Leveling information.	H25.3(a)(4)	
() Scheduling information for each part of () aircraft, including periods for () cleaning, () inspecting, () adjusting, () testing, and () lubricating; and () the work recommended at these periods.	H25.3(b)(1)	
() Scheduling information for () aircraft engines, including recommended periods for () cleaning, () inspecting, () adjusting, () testing, and () lubricating; and () the work recommended at these periods. NOTE: This information may be in the FAA accepted engine ICA.	H25.3(b)(1)	
() Scheduling information for () the aircraft's auxiliary power unit, including recommended periods for () cleaning, () inspecting, () adjusting, () testing, and () lubricating; and () the work recommended at these periods.	H25.3(b)(1)	
() Scheduling information for () aircraft propellers, including recommended periods for () cleaning, () inspecting, () adjusting, () testing, and () lubricating; and () the work recommended at these periods.	H25.3(b)(1)	
() Scheduling information for () aircraft accessories, including recommended periods for () cleaning, () inspecting, () adjusting, () testing, and () lubricating; and () the work recommended at these periods.	H25.3(b)(1)	
() Scheduling information for () aircraft instruments, including recommended periods for () cleaning, () inspecting, () adjusting, () testing, and () lubricating; and () the work recommended at these periods.	H25.3(b)(1)	

**APPENDIX 2. TRANSPORT CATEGORY AIRCRAFT ICA CHECKLIST
(CONTINUED)**

REQUIREMENT	Regulation Appendix	Location In ICA
() Scheduling information for () aircraft equipment, including recommended periods for () cleaning, () inspecting, () adjusting, () testing, and () lubricating; and () the work recommended at these periods.	H25.3(b)(1)	
() Degree of inspection for each part of () aircraft and its () engines, () the auxiliary power unit, () propellers, () accessories, () instruments, and () equipment.	H25.3(b)(1)	
() The applicable wear tolerances.	H25.3(b)(1)	
Applicant may refer to an () accessory, () instrument, or () equipment manufacturer as the source of this information if applicant shows () that the item is exceptionally complex and requires specialized maintenance techniques, test equipment, or expertise.	H25.3(b)(1)	
() The recommended overhaul periods and necessary cross-references to the ALS.	H25.3(b)(1)	
() An inspection program that includes () the frequency and () extent of the inspection necessary to provide for continued airworthiness.	H25.3(b)(1)	
() All CMR necessary for airworthiness.	H25.3(b)(1)	
() Troubleshooting information describing () probable malfunctions, () how to recognize those malfunctions, and () remedies for them.	H25.3(b)(2)	
() Descriptions of the order and method of () removing and () replacing products (engines and propellers) with any necessary precautions.	H25.3(b)(3)	
() Descriptions of the order and method of () removing and () replacing parts with any necessary precautions.	H25.3(b)(3)	
() Other instructions, including () storage limitations and procedures for () testing system during ground running, () making symmetry checks, () weighing and determining the center of gravity, () lifting, and () shoring.	H25.3(b)(4)	
() Diagrams of structural access plates and information needed to gain access for inspections when access plates are not provided.	H25.3(c)	

**APPENDIX 2. TRANSPORT CATEGORY AIRCRAFT ICA CHECKLIST
(CONTINUED)**

REQUIREMENT	Regulation Appendix	Location In ICA
() Details to apply special inspection techniques, including radiographic and ultrasonic testing where such processes are specified.	H25.3(d)	
() Information needed to apply protective treatment to structure after inspection.	H25.3(e)	
() All data on structural fasteners, such as () identification, () discard recommendations, and () torque values.	H25.3(f)	
() List of special tools needed.	H25.3(g)	
() ICA must contain a section, titled Airworthiness Limitations that is () segregated and () clearly distinguishable from the rest of the document. NOTE: The appropriate ACO/ECO office will evaluate and approve the Airworthiness Limitations Section (ALS) in the applicant's ICA.	H25.4(a)	
() ALS must describe each mandatory replacement time, structural inspection interval, and related structural inspection procedures approved under 14 CFR § 25.571.	H25.4(a)(1)	
() ALS must describe each mandatory replacement time, inspection interval, related inspection procedure, and all critical design configuration control limitations approved under 14 CFR § 25.981 for the fuel tank system.	H25.4(a)(2)	
() If the ICA consist of multiple manuals, the ALS required by this paragraph must be in the principal manual.	H25.4(b)	
() ALS must contain a legible statement in a prominent location that reads: "The Airworthiness Limitations Section is FAA approved and specifies maintenance required under 14 CFR §§ 43.16 and 91.403, unless an alternative program has been FAA approved."	H25.4(b)	

APPENDIX 3. SMALL ROTORCRAFT ICA CHECKLIST

REQUIREMENT	Regulation Appendix	Location In ICA
() ICA for each engine.	A27.1(b)	
() ICA for each rotor.	A27.1(b)	
() ICA for each appliance required by this chapter.	A27.1(b)	
() Required information on the interface of () appliances, () engines, and () rotors with the rotorcraft.	A27.1(b)	
() If ICA are not supplied by the manufacturer of an () appliance, () engine, or () rotor installed on the rotorcraft, the ICA for the rotorcraft must include the () information essential to the continued airworthiness of the rotorcraft.	A27.1(b)	
() Applicant's program showing how they or the manufacturers of products and appliances installed on the rotorcraft will distribute changes to the ICA.	A27.1(c)	
() ICA in a manual or manuals. () Manuals arranged for easy and practical use.	A27.2(a) A27.2(b)	
() Manuals prepared in English.	A27.3	
() Manuals must include introductory information explaining the rotorcraft's features and data necessary for maintenance or preventive maintenance.	A27.3(a)(1)	
() Description of () rotorcraft and its systems and installations, () engines and its systems and installations, () rotors and its systems and installations, and () appliances and its systems and installations.	A27.3(a)(2)	
() Basic control and operating information describing () how the rotorcraft components and systems are controlled and () how the rotorcraft components and systems are operated, including () any special procedure and limitations.	A27.3(a)(3)	
() Servicing information covering () servicing points, () capacities of tanks, () capacities of reservoirs, () types of fluids used, and () pressures applicable to the various systems.	A27.3(a)(4)	
() Location of access panels for () inspection and () servicing.	A27.3(a)(4)	
() Servicing information covering () locations of lube points and () the lube used.	A27.3(a)(4)	

APPENDIX 3. SMALL ROTORCRAFT ICA CHECKLIST (CONTINUED)

REQUIREMENT	Regulation Appendix	Location In ICA
() Equipment required for servicing.	A27.3(a)(4)	
() Tow instructions and limitations.	A27.3(a)(4)	
() Mooring information.	A27.3(a)(4)	
() Jacking information.	A27.3(a)(4)	
() Leveling information.	A27.3(a)(4)	
() Scheduling information for each part of the () rotorcraft, including recommended periods for () cleaning, () inspecting, () adjusting, () testing, and () lubricating; and () the work recommended at these periods.	A27.3(b)(1)	
() Scheduling information for () rotorcraft engines, including recommended periods for () cleaning, () inspecting, () adjusting, () testing, and () lubricating; and () the work recommended at these periods. NOTE: This information may be in the FAA/Authority accepted engine ICA.	A27.3(b)(1)	
() Scheduling information for () the rotorcraft's auxiliary power unit, including recommended periods for () cleaning, () inspecting, () adjusting, () testing, and () lubricating; and () the work recommended at these periods.	A27.3(b)(1)	
() Scheduling information for () rotorcraft rotors, including recommended periods for () cleaning, () inspecting, () adjusting, () testing, and () lubricating; and () the work recommended at these periods.	A27.3(b)(1)	
() Scheduling information for () rotorcraft accessories, including recommended periods for () cleaning, () inspecting, () adjusting, () testing, and () lubricating; and () the work recommended at these periods.	A27.3(b)(1)	
() Scheduling information for () rotorcraft instruments, including recommended periods for () cleaning, () inspecting, () adjusting, () testing, and () lubricating; and () the work recommended at these periods.	A27.3(b)(1)	

APPENDIX 3. SMALL ROTORCRAFT ICA CHECKLIST (CONTINUED)

REQUIREMENT	Regulation Appendix	Location In ICA
<input type="checkbox"/> Scheduling information for <input type="checkbox"/> rotorcraft equipment, including recommended periods for <input type="checkbox"/> cleaning, <input type="checkbox"/> inspecting, <input type="checkbox"/> adjusting, <input type="checkbox"/> testing, and <input type="checkbox"/> lubricating; and <input type="checkbox"/> the work recommended at these periods.	A27.3(b)(1)	
<input type="checkbox"/> Degree of inspection for each part of <input type="checkbox"/> rotorcraft and its <input type="checkbox"/> engines, <input type="checkbox"/> the auxiliary power unit, <input type="checkbox"/> rotors, <input type="checkbox"/> accessories, <input type="checkbox"/> instruments, and <input type="checkbox"/> equipment.	A27.3(b)(1)	
<input type="checkbox"/> The applicable wear tolerances.	A27.3(b)(1)	
Applicant may refer to an <input type="checkbox"/> accessory, <input type="checkbox"/> instrument, or <input type="checkbox"/> equipment manufacturer as the source of this information if applicant shows <input type="checkbox"/> that the item is exceptionally complex and requires specialized maintenance techniques, test equipment, or expertise.	A27.3(b)(1)	
<input type="checkbox"/> Recommended overhaul periods and necessary cross-references to the ALS.	A27.3(b)(1)	
<input type="checkbox"/> Inspection program that includes <input type="checkbox"/> the frequency and <input type="checkbox"/> extent of the inspection necessary to provide for continued airworthiness.	A27.3(b)(1)	
<input type="checkbox"/> Troubleshooting information describing <input type="checkbox"/> probable malfunctions, <input type="checkbox"/> how to recognize those malfunctions, and <input type="checkbox"/> remedies for them.	A27.3(b)(2)	
<input type="checkbox"/> Descriptions of the order and method of <input type="checkbox"/> removing and <input type="checkbox"/> replacing engines with any necessary precautions.	A27.3(b)(3)	
<input type="checkbox"/> Descriptions of the order and method of <input type="checkbox"/> removing and <input type="checkbox"/> replacing rotors with any necessary precautions.	A27.3(b)(3)	
<input type="checkbox"/> Descriptions of the order and method of <input type="checkbox"/> removing and <input type="checkbox"/> replacing parts with any necessary precautions.	A27.3(b)(3)	
<input type="checkbox"/> Other instructions, including <input type="checkbox"/> storage limitations and procedures for <input type="checkbox"/> testing system during ground running, <input type="checkbox"/> making symmetry checks, <input type="checkbox"/> weighing and determining the center of gravity, <input type="checkbox"/> lifting, and <input type="checkbox"/> shoring.	A27.3(b)(4)	
<input type="checkbox"/> Diagrams of structural access plates and information needed to gain access for inspections when access plates are not provided.	A27.3(c)	

APPENDIX 3. SMALL ROTORCRAFT ICA CHECKLIST (CONTINUED)

REQUIREMENT	Regulation Appendix	Location In ICA
() Details to apply special inspection techniques, including radiographic and ultrasonic testing where such processes are specified.	A27.3(d)	
() Information needed to apply protective treatment to structure after inspection.	A27.3(e)	
() All data on structural fasteners, such as () identification, () discard recommendations, and () torque values.	A27.3(f)	
() List of special tools needed.	A27.3(g)	
() ICA must contain a section, titled Airworthiness Limitations, that is () segregated and () clearly distinguishable from the rest of the document. NOTE: The appropriate ACO/ECO office will evaluate and approve Airworthiness Limitations Section (ALS) in the applicant's ICA.	A27.4	
() ALS must describe each mandatory replacement time, structural inspection interval, and related structural inspection procedures approved under 14 CFR § 27.571.	A27.4	
() If the ICA consist of multiple manuals, the ALS required by this paragraph must be in the principal manual.	A27.4	
() ALS must contain a legible statement in a prominent location that reads: "The Airworthiness Limitations Section is FAA approved and specifies maintenance required under 14 CFR §§ 43.16 and 91.403, unless an alternative program has been FAA approved.	A27.4	

APPENDIX 4. TRANSPORT CATEGORY ROTORCRAFT ICA CHECKLIST

REQUIREMENT	Regulation Appendix	Location In ICA
<input type="checkbox"/> ICA for each engine.	A29.1(b)	
<input type="checkbox"/> ICA for each rotor.	A29.1(b)	
<input type="checkbox"/> ICA for each appliance required by this chapter.	A29.1(b)	
<input type="checkbox"/> Any required information on the interface of the <input type="checkbox"/> appliances, <input type="checkbox"/> engines, and <input type="checkbox"/> rotors with the rotorcraft.	A29.1(b)	
<input type="checkbox"/> If ICA are not supplied by the manufacturer of an <input type="checkbox"/> appliance, <input type="checkbox"/> engine, or <input type="checkbox"/> rotor installed on the rotorcraft, the ICA for the rotorcraft must include <input type="checkbox"/> the information essential to the continued airworthiness of the rotorcraft.	A29.1(b)	
<input type="checkbox"/> Applicant's program showing how they or the manufacturers of products and appliances installed on the rotorcraft will distribute changes to the ICA.	A29.1(c)	
<input type="checkbox"/> ICA in a manual or manuals. <input type="checkbox"/> Manuals arranged for easy and practical use.	A29.2(a) A29.2(b)	
<input type="checkbox"/> ICA manual prepared in English.	A29.3	
<input type="checkbox"/> Manuals must include introductory information explaining the rotorcraft's features and data necessary for maintenance or preventive maintenance.	A29.3(a)(1)	
<input type="checkbox"/> Description of <input type="checkbox"/> rotorcraft and its systems and installations, <input type="checkbox"/> engines and its systems and installations, <input type="checkbox"/> rotors and its systems and installations, and <input type="checkbox"/> appliances and its systems and installations.	A29.3(a)(2)	
<input type="checkbox"/> Basic control and operating information describing <input type="checkbox"/> how the rotorcraft components and systems are controlled and <input type="checkbox"/> how the rotorcraft components and systems are operated, including <input type="checkbox"/> any special procedure and limitations.	A29.3(a)(3)	
<input type="checkbox"/> Servicing information covering <input type="checkbox"/> servicing points, <input type="checkbox"/> capacities of tanks, <input type="checkbox"/> capacities of reservoirs, <input type="checkbox"/> types of fluids to be used, and <input type="checkbox"/> pressures applicable to the various systems.	A29.3(a)(4)	
<input type="checkbox"/> Location of access panels for <input type="checkbox"/> inspection and <input type="checkbox"/> servicing.	A29.3(a)(4)	
<input type="checkbox"/> Servicing information covering <input type="checkbox"/> locations of lube points and <input type="checkbox"/> the lube used.	A29.3(a)(4)	

**APPENDIX 4. TRANSPORT CATEGORY
ROTORCRAFT ICA CHECKLIST (CONTINUED)**

REQUIREMENT	Regulation Appendix	Location In ICA
() Equipment required for servicing.	A29.3(a)(4)	
() Tow instructions and limitations.	A29.3(a)(4)	
() Mooring information.	A29.3(a)(4)	
() Jacking information.	A29.3(a)(4)	
() Leveling information.	A29.3(a)(4)	
() Scheduling information for each part of the () rotorcraft, including recommended periods for () cleaning, () inspecting, () adjusting, () testing, and () lubricating; and the () work recommended at these periods.	A29.3(b)(1)	
() Scheduling information for () rotorcraft engines, including recommended periods for () cleaning, () inspecting, () adjusting, () testing, and () lubricating; and the () work recommended at these periods. NOTE: This information may be in the FAA/Authority accepted engine ICA.	A29.3(b)(1)	
() Scheduling information for () the rotorcraft auxiliary power unit, including recommended periods for () cleaning, () inspecting, () adjusting, () testing, and () lubricating; and the () work recommended at these periods.	A29.3(b)(1)	
() Scheduling information for () rotorcraft rotors, including recommended periods for () cleaning, () inspecting, () adjusting, () testing, and () lubricating; and the () work recommended at these periods.	A29.3(b)(1)	
() Scheduling information for () rotorcraft accessories, including recommended periods for () cleaning, () inspecting, () adjusting, () testing, and () lubricating; and the () work recommended at these periods.	A29.3(b)(1)	
() Scheduling information for () rotorcraft instruments, including recommended periods for () cleaning, () inspecting, () adjusting, () testing, and () lubricating; and the () work recommended at these periods.	A29.3(b)(1)	
() Scheduling information for the () rotorcraft equipment, including recommended periods for () cleaning, () inspecting, () adjusting, () testing, and () lubricating; and the () work recommended at these periods.	A29.3(b)(1)	

**APPENDIX 4. TRANSPORT CATEGORY
ROTORCRAFT ICA CHECKLIST (CONTINUED)**

REQUIREMENT	Regulation Appendix	Location In ICA
() Degree of inspection for each part of the () rotorcraft and its () engines, () the auxiliary power unit, () rotors, () accessories, () instruments, and () equipment.	A29.3(b)(1)	
() Applicable wear tolerances.	A29.3(b)(1)	
Applicant may refer to an () accessory, () instrument, or () equipment manufacturer as the source of this information if applicant shows () that the item is exceptionally complex and requires specialized maintenance techniques, test equipment, or expertise.	A29.3(b)(1)	
() Recommended overhaul periods and necessary cross-references to the ALS.	A29.3(b)(1)	
() Inspection program that includes () the frequency and () extent of the inspection necessary to provide for continued airworthiness.	A29.3(b)(1)	
() Troubleshooting information describing () probable malfunctions, () how to recognize those malfunctions, and () remedies for them.	A29.3(b)(2)	
() Description of the order and method of () removing and () replacing engines with any necessary precautions.	A29.3(b)(3)	
() Description of the order and method of () removing and () replacing rotors with any necessary precautions.	A29.3(b)(3)	
() Description of the order and method of () removing and () replacing parts with any necessary precautions.	A29.3(b)(3)	
() Other instructions, including () storage limitations and procedures for () testing the system during ground running, () making symmetry checks, () weighing and determining the center of gravity, () lifting, and () shoring.	A29.3(b)(4)	
() Diagrams of structural access plates and information needed to gain access for inspections when access plates are not provided.	A29.3(c)	
() Details for applying special inspection techniques, including radiographic and ultrasonic testing where such processes are specified.	A29.3(d)	
() Information needed to apply protective treatment to structure after inspection.	A29.3(e)	

**APPENDIX 4. TRANSPORT CATEGORY
ROTORCRAFT ICA CHECKLIST (CONTINUED)**

REQUIREMENT	Regulation Appendix	Location In ICA
() All data on structural fasteners, such as () identification, () discard recommendations, and () torque values.	A29.3(f)	
() List of special tools needed.	A29.3(g)	
() ICA must contain a section, titled Airworthiness Limitations, that is () segregated and () clearly distinguishable from the rest of the document. NOTE: The appropriate ACO/ECO will evaluate and approve the Airworthiness Limitations Section (ALS) in the applicant's ICA.	A29.4	
() ALS must describe each mandatory replacement time, structural inspection interval, and related structural inspection procedures approved under 14 CFR § 29.571.	A29.4	
() If ICA consists of multiple manuals, ALS required by this paragraph must be in the principal manual.	A29.4	
() ALS must contain a legible statement in a prominent location that reads: "The Airworthiness Limitations Section is FAA approved and specifies maintenance required under 14 CFR §§ 43.16 and 91.403, unless an alternative program has been FAA approved."	A29.4	

APPENDIX 5. MANNED FREE BALLOON ICA CHECKLIST

REQUIREMENT	Regulation Appendix	Location In ICA
<input type="checkbox"/> ICA includes ICA for all balloon parts required by this chapter.	A31.1(b)	
<input type="checkbox"/> ICA includes any required information on the interface of the balloon's required parts.	A31.1(b)	
<input type="checkbox"/> ICA includes information essential to the balloon's continued airworthiness.	A31.1(b)	
<input type="checkbox"/> Applicant's program showing how they or the manufacturers of parts installed on the balloon will distribute changes to the ICA.	A31.1(c)	
<input type="checkbox"/> ICA in a manual or manuals.	A31.2(a)	
<input type="checkbox"/> Manuals arranged for easy and practical use.	A31.2(b)	
<input type="checkbox"/> The manuals prepared in English.	A31.3	
<input type="checkbox"/> Manuals must include introductory information that explains the balloon's features and data necessary for maintenance or preventive maintenance.	A31.3(a)	
<input type="checkbox"/> Description of balloon and its systems and installations.	A31.3(b)	
<input type="checkbox"/> Basic control and operating information for the balloon and its components and systems.	A31.3(c)	
<input type="checkbox"/> Servicing information covering <input type="checkbox"/> servicing of balloon components, <input type="checkbox"/> burner nozzles, <input type="checkbox"/> fuel tanks, and <input type="checkbox"/> valves during operations.	A31.3(d)	
<input type="checkbox"/> Maintenance information for each part of balloon with recommended periods for <input type="checkbox"/> cleaning, <input type="checkbox"/> adjustment, <input type="checkbox"/> test, <input type="checkbox"/> lubrication, <input type="checkbox"/> applicable wear tolerances, and <input type="checkbox"/> the work recommended.	A31.3(e)	
<input type="checkbox"/> Maintenance information for each part of the envelope with recommended periods for <input type="checkbox"/> cleaning, <input type="checkbox"/> adjusting, <input type="checkbox"/> testing, and <input type="checkbox"/> lubricating; <input type="checkbox"/> applicable wear tolerances; and <input type="checkbox"/> the work recommended.	A31.3(e)	
<input type="checkbox"/> Maintenance information for each part of the controls with recommended periods for <input type="checkbox"/> cleaning, <input type="checkbox"/> adjusting, <input type="checkbox"/> testing, and <input type="checkbox"/> lubricating; <input type="checkbox"/> applicable wear tolerances; and <input type="checkbox"/> the work recommended.	A31.3(e)	

APPENDIX 5. MANNED FREE BALLOON ICA CHECKLIST (CONTINUED)

REQUIREMENT	Regulation Appendix	Location In ICA
<p>() Maintenance information for each part of the rigging, including recommended periods for () cleaning, () adjusting, () testing, and () lubricating; () applicable wear tolerances; and () the work recommended.</p>	A31.3(e)	
<p>() Maintenance information for each part of the basket structure, including recommended periods for () cleaning, () adjusting, () testing, and () lubricating; () applicable wear tolerances; and () the work recommended.</p>	A31.3(e)	
<p>() Maintenance information for each part of the fuel systems, including recommended periods for () cleaning, () adjusting, () testing, and () lubricating; () applicable wear tolerances; and () the work recommended.</p>	A31.3(e)	
<p>() Maintenance information for each of the instruments, including recommended periods for () cleaning, () adjusting, () testing, and () lubricating; () applicable wear tolerances; and () the work recommended.</p>	A31.3(e)	
<p>() Maintenance information for each part of the heater assembly, including recommended periods for () cleaning, () adjusting, () testing, and () lubricating; () applicable wear tolerances; and () the work recommended.</p>	A31.3(e)	
<p>Applicant may refer to an () accessory, () instrument, or () equipment manufacturer as the source of this information if applicant shows () that the item is exceptionally complex and requires specialized maintenance techniques, test equipment, or expertise.</p>	A31.3(e)	
<p>() Recommended overhaul periods and necessary cross-references to the ALS must also be included.</p>	A31.3(e)	
<p>() Inspection program that includes () the frequency and () extent of the inspection necessary to provide for the balloon's continued airworthiness.</p>	A31.3(e)	

APPENDIX 5. MANNED FREE BALLOON ICA CHECKLIST (CONTINUED)

REQUIREMENT	Regulation Appendix	Location In ICA
() Troubleshooting information describing () probable malfunctions, () how to recognize those malfunctions, and () remedies for them.	A31.3(f)	
() Details for what, and how, to inspect after a hard landing.	A31.3(g)	
() Instructions for storage preparation, including any storage limits.	A31.3(h)	
() Instructions for repair on the balloon envelope and its basket or trapeze.	A31.3(i)	
() ICA must contain a section, titled Airworthiness Limitations, that is () segregated and () clearly distinguishable from the rest of the document. NOTE: The appropriate ACO/ECO will evaluate and approve the Airworthiness Limitations Section (ALS) in the applicant's ICA.	A31.4	
() ALS must describe each () mandatory replacement time, () structural inspection interval, and () related structural inspection procedure, including () envelope structural integrity, required for type certification.	A31.4	
() If ICA consist of multiple manuals, the ALS required by this paragraph must be in the principal manual.	A31.4	
() ALS must contain a legible statement in a prominent location that reads: "The Airworthiness Limitations Section is FAA approved and specifies maintenance required under 14 CFR §§ 43.16 and 91.403."	A31.4	

APPENDIX 6. ENGINE ICA CHECKLIST

REQUIREMENT	Regulation Appendix	Location In ICA
() ICA for each engine must include the ICA for all engine parts.	A33.1(b)	
() Applicant's program showing how they or the manufacturers of engine parts will distribute changes to the ICA.	A33.1(c)	
() ICA in a manual or manuals.	A33.2(a)	
() Manuals arranged for easy and practical use.	A33.2(b)	
() Manuals prepared in English.	A33.3	
() ICA must contain the following manuals or sections, as appropriate, and information: () Engine Maintenance Manual or Section. () Engine Overhaul Manual or Section.	A33.3	
Engine Maintenance Manual or Section.	A33.3(a)	
() Introduction information that explains the engine's features and data for maintenance or preventive maintenance.	A33.3(a)(1)	
() Detailed description of the engine and its () components, () systems, () and installations.	A33.3(a)(2)	
() Installation instructions, including proper procedures for () uncrating, () deinhbiting, () acceptance checking, and () lifting and attaching accessories, () with any necessary checks.	A33.3(a)(3)	
() Basic control and operating information describing how the engine components, systems, and installations () operate, and information describing the methods of () starting, () running, () testing, and () stopping the engine and its parts, including any () special procedures and () limitations that apply.	A33.3(a)(4)	
() Servicing information covering () servicing points, () capacities of tanks, () reservoirs, () types of fluids to be used, () pressures applicable to the various systems, () locations of lubrication points, () lubricants to be used, and () equipment required for servicing.	A33.3(a)(5)	

APPENDIX 6. ENGINE ICA CHECKLIST (CONTINUED)

REQUIREMENT	Regulation Appendix	Location In ICA
() Scheduling information for each part of the engine, including recommended periods for () cleaning, () inspecting, () adjusting, () testing, and () lubricating; the () degree of inspection; the applicable () wear tolerances; and () work recommended.	A33.3(a)(6)	
() Recommended () overhaul periods and () necessary cross-references to the ALS of the manual must also be included.	A33.3(a)(6)	
() Applicant must include an () inspection program that includes the () frequency and () extent of the inspection necessary to provide for continued airworthiness.	A33.3(a)(6)	
() Troubleshooting information describing () probable malfunctions, () how to recognize those malfunctions, and () remedies for them.	A33.3(a)(7)	
() Descriptions of the order and method of () removing the engine and its parts and replacing () parts, with any necessary () precautions. Instructions for proper () ground handling, () crating, and () shipping must also be included.	A33.3(a)(8)	
() List of the () tools and () equipment necessary for maintenance and directions for use.	A33.3(a)(9)	
Engine Overhaul Manual or Section.	A33.3(b)	
() Disassembly information, including the order and method of disassembly for overhaul.	A33.3(b)(1)	
() Cleaning and inspection () instructions that cover the () materials and () apparatus to be used and () methods and () precautions during overhaul.	A33.3(b)(2)	
() Methods of overhaul inspection must also be included.	A33.3(b)(2)	
() Details of all fits and clearances relevant to overhaul.	A33.3(b)(3)	
() Details of repair methods for worn or otherwise substandard parts and components along with the information necessary to determine when replacement is necessary.	A33.3(b)(4)	
() Order and method of assembly at overhaul.	A33.3(b)(5)	
() Instruction for testing after overhaul.	A33.3(b)(6)	
() Instructions for () storage preparation, including any () storage limits.	A33.3(b)(7)	

APPENDIX 6. ENGINE ICA CHECKLIST (CONTINUED)

REQUIREMENT	Regulation Appendix	Location In ICA
() A list of tools needed for overhaul.	A33.3(b)(8)	
() ICA must contain a section, titled Airworthiness Limitations, that is () segregated and () clearly distinguishable from the rest of the document. NOTE: The appropriate ACO/ECO will evaluate and approve the Airworthiness Limitations Section (ALS) in the applicant's ICA.	A33.4	
() ALS must describe each () mandatory replacement time, () inspection interval, and () related procedure required for type certification.	A33.4	
() If ICA consist of multiple manuals, the section required by this paragraph must be in the principal manual.	A33.4	
() ALS must contain a legible statement in a prominent location that reads: "The Airworthiness Limitations Section is FAA approved and specifies maintenance required under 14 CFR §§ 43.16 and 91.403, unless an alternative program has been FAA approved."	A33.4	

APPENDIX 7. PROPELLER ICA CHECKLIST

REQUIREMENT	Regulation Appendix	Location In ICA
() ICA for each propeller must include ICA for all propeller parts.	A35.1(b)	
() Applicant's program showing how they or the manufacturers of propeller parts will distribute changes to the ICA.	A35.1(c)	
() ICA in a manual or manuals.	A35.2(a)	
() Manuals arranged for easy and practical use.	A35.2(b)	
() Manuals prepared in English.	A35.3	
() ICA must contain the following sections and information: () Propeller Maintenance Section. () Propeller Overhaul Section.	A35.3(a)	
Propeller Maintenance Section.	A35.3(a)	
() Introduction information that explains the propeller's features and data for maintenance or preventive maintenance.	A35.3(a)(1)	
() Detailed description of propeller and its () systems, () and installations.	A35.3(a)(2)	
() Basic descriptions of how propeller components and systems are () controlled and how they () operate, including any () special procedures that apply.	A35.3(a)(3)	
() Instructions for () uncrating, () acceptance checking, () lifting, and () installing propeller.	A35.3(a)(4)	
() Instructions for propeller operational checks.	A35.3(a)(5)	
() Scheduling information for each part of propeller, including recommended periods for () cleaning, () adjusting, and () testing; the applicable () wear tolerances; and the () work recommended.	A35.3(a)(6)	
() Recommended () overhaul periods and () necessary cross-references to the ALS of the manual must also be included.	A35.3(a)(6)	
() In addition, the applicant must include an () inspection program that includes the () frequency and () extent of inspection necessary for propeller's continued airworthiness.	A35.3(a)(6)	
() Troubleshooting information describing () probable malfunctions, () how to recognize those malfunctions, and () remedies for them.	A35.3(a)(7)	

APPENDIX 7. PROPELLER ICA CHECKLIST (CONTINUED)

REQUIREMENT	Regulation Appendix	Location In ICA
() Description of order and method of () removing and replacing () propeller parts, with any () necessary precautions.	A35.3(a)(8)	
() List of special tools for maintenance, other than for overhauls.	A35.3(a)(9)	
Propeller Overhaul Section.	A35.3(b)	
() Disassembly information, including () order and method of disassembly for overhaul.	A35.3(b)(1)	
() Cleaning and inspection () instructions covering the () materials and () apparatus used, and () methods and () precautions to take during overhaul.	A35.3(b)(2)	
() Include methods of overhaul inspection.	A35.3(b)(2)	
() Details of all fits and () clearances relevant to overhaul.	A35.3(b)(3)	
() Details of repair methods for worn or otherwise substandard parts and components along with the () information to determine when replacement is necessary.	A35.3(b)(4)	
() Order and method of assembly at overhaul.	A35.3(b)(5)	
() Instruction for testing after overhaul.	A35.3(b)(6)	
() Instructions for storage preparation, including any () storage limits.	A35.3(b)(7)	
() A list of tools needed for overhaul.	A35.3(b)(8)	
() ICA must contain a section, titled Airworthiness Limitations, that is () segregated and () clearly distinguishable from the rest of the document. NOTE: The appropriate ACO/ECO will evaluate and approve the Airworthiness Limitations Section (ALS) in the applicant's ICA.	A35.4	
() The ALS must describe each () mandatory replacement time, () inspection interval, and () related procedure required for type certification.	A35.4	
() ALS must contain a legible statement in a prominent location that reads: "The Airworthiness Limitations Section is FAA approved and specifies maintenance required under §§ 43.16 and 91.403 of the Federal Aviation Regulations, unless an alternative program has been FAA approved."	A35.4	

APPENDIX 8. RELATED PUBLICATIONS

- 1. Code of Federal Regulations (CFR).** Order copies of 14 CFR sections from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402-9325. Telephone 202-512-1800; fax 202-512-2250. Alternatively, you can get copies online at <http://www.gpoaccess.gov/cfr/>.
- 2. FAA Orders, Advisory Circulars (AC), and Technical Standard Orders (TSO).** Copies of the following orders, ACs, and TSO are available from the FAA website at <http://www.airweb.faa.gov/rgl>.
 - a. FAA Order 8110.4, *Type Certification*
 - b. FAA Order 8110.42, *Parts Manufacturer Approval Procedures*
 - c. FAA Order 8300.10, *Airworthiness Inspectors Handbook* (**NOTE:** You can get copies of this order online at http://www.faa.gov/library/manuals/examiners_inspectors/8300/.)
 - d. FAA Order 8430.21, *Flight Standards Division, Aircraft Certification Division, and Aircraft Evaluation Group Responsibilities*
 - e. AC 20-114, *Manufacturers' Service Documents*
 - f. AC 21-40, *Application Guide for Obtaining a Supplemental Type Certificate*
 - g. AC 25-19, *Certification Maintenance Requirements*
 - h. AC 25.1529-1, *Instructions for Continued Airworthiness of Structural Repairs on Transport Airplanes*
 - i. AC 33.4-1, *Instructions for Continued Airworthiness*
 - j. AC 33.4-2, *Instructions for Continued Airworthiness: In-Service Inspection of Safety Critical Turbine Engine Parts at Piece-Part Opportunity*
 - k. AC 35.4-1, *Propeller Instructions for Continued Airworthiness*
 - l. AC 43-13-1B, *Acceptable Methods, Techniques, and Practices – Aircraft Inspection and Repair*
 - m. AC 121-22, *Maintenance Review Board Procedures*
 - n. TSO-C77b, *Gas Turbine Auxiliary Power Units*
- 3. Other FAA Document.** *The FAA and Industry Guide to Product Certification* (CPI Guide), dated September 2004, is available from the FAA website at http://www.faa.gov/aircraft/aircert/design_approvals/media/CPI_guide_II.pdf.

APPENDIX 8. RELATED PUBLICATIONS (continued)

4. Air Transport Association (ATA) Document. Order copies of ATA iSpec 2200, *Information Standards for Aviation Maintenance*, latest edition, from the ATA Distribution Center, P.O. Box 511, Annapolis Junction, MD 20701. Telephone 301-490-7951; fax 301-206-9789. Alternatively, you can buy copies on-line at <http://www.airlines.org/>.

5. General Aviation Manufacturers Association (GAMA) Document. Order copies of GAMA Specification No. 2, *Maintenance Manual*, dated September 1, 1982, from the General Aviation Manufacturers Association, 1400 K Street NW, Suite 801, Washington, D.C. 20005. Telephone 202-393-1500; fax 202-842-4063. Alternatively, you can buy copies on-line at <http://www.gama.aero/>.

APPENDIX 9. DEFINITIONS

Acceptable ICA. ICA that we at the FAA evaluated and found to meet the requirements of the applicable airworthiness regulations.

ACO/ECO Engineer. Aviation safety engineer responsible for finding compliance and issuing design approvals.

Aircraft Evaluation Group (AEG). Flight standards group that is co-located with each directorate. These groups are responsible for determining the operational acceptability and continuing airworthiness requirements of newly certified or modified aircraft, engines, and propellers. These products are intended to be operated under 14 CFR requirements.

Airworthy. When a product conforms to its type design or properly altered condition and is in a condition for safe operation.

Applicant. Individual, firm, partnership, corporation, company, association, joint stock association, or governmental entity. Includes a trustee, receiver, assignee, or similar representative of any of them.

Continued Airworthiness. When certified aircraft, engines, propellers, and appliances maintain a condition in which they can be operated safely for their intended purpose. They maintain this condition safely throughout their service life. The product shows its continued airworthiness when it meets its type design and is in a condition for safe operation.

Design Approval Holder. Holder of any design approval, including TCs, amended TCs, STCs, amended STCs, PMAs, TSO authorization, letter of TSO design approval, and field approvals (FAA Form 337).

Field Approval. Major repair or major alteration authorized by an aviation safety inspector for an individual aircraft, aircraft engine, propeller, or appliance. We approve these major repairs or alterations by either examining data only, or by physically inspecting, demonstrating, or testing the product.

Instructions for Continued Airworthiness. Documentation that gives instructions and requirements for the maintenance that is essential to the continued airworthiness of an aircraft, engine, or propeller.

Manufacturers' Service Documents. Publications by a TC holder (or appliance or component manufacturer) about safety, product improvement, economics, and operational and maintenance practices. Typical publications include: service bulletins; all-operator's letters; service newsletters; and service digests or magazines. They do not include publications required for FAA type certification or approval, such as flight manuals and certain maintenance manuals.

Operator. Person who uses, or is authorized to use, aircraft for air navigation, including piloting the aircraft.

APPENDIX 9. DEFINITIONS (continued)

Owner. For this order, an owner is a person who owns an aircraft, balloon, aircraft engine, or propeller.

Product. For this order, product means an aircraft, balloon, aircraft engine, or propeller.

APPENDIX 10. ACRONYMS

AC	Advisory Circular
ACO	Aircraft Certification Office
AEG	Aircraft Evaluation Group
AFS	Flight Standards Service
AIR	Aircraft Certification Service
ALS	Airworthiness Limitation Section
CFR	Code of Federal Regulations
CMM	Component Maintenance Manual
CMR	Certification Maintenance Requirements
ECO	Engine Certification Office
FAA	Federal Aviation Administration
FSDO	Flight Standards District Office
GPS	Global Positioning Satellite
ICA	Instructions for Continued Airworthiness
MRB	Maintenance Review Board
NDT	Non-Destructive Test
PMA	Parts Manufacturer Approval
STC	Supplemental Type Certificate
TC	Type Certificate
TCDS	Type Certificate Data Sheet
TSO	Technical Standard Order



U.S. Department
of Transportation

**Federal Aviation
Administration**

Directive Feedback Information

Please submit any written comments or recommendations for improving this directive. You may also suggest new items or subjects that should be added. Please alert us if you find an error.

Subject: Order 8100.54

To: Directive Management Officer, AIR-530

(Please check all appropriate line items)

An error (procedural or typographical) has been noted in paragraph _____ on page _____.

Recommend paragraph _____ on page _____ be changed as follows:
(Attach separate sheet if necessary)

In a future change to this directive, please include coverage on the following subject
(Briefly describe what you want added):

Other comments:

I would like to discuss the above. Please contact me.

Submitted by: _____ Date: _____

FTS Telephone Number: _____ Routing Symbol: _____